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HAROLD S. BUTTENHEIM, Editor
THEODORE REED KENDALL
Secretary and Engineering Editor
M. V. FULLER, Associate Editor
ALDEN W. WELCH, Research Editor
HERBERT K. SAXE
Treasurer
MYRON MacLEOD, Advertising Mgr.
PRENTICE C. FORD, Asst. to President

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See pp. 17, 18, 20, 113, 115 for catalogs and publications on municipal and civic subjects

For Index to Advertisements see page 130

Let's Stick to Facts about PITTSBURGH IMO METERS

It's a fact . . .
THEY MEASURE THE LOW FLOWS
It's a fact . . .
THEY OPERATE QUIETLY
It's a fact . . .
THEY RETAIN THEIR INITIAL ACCURACY
It's a fact . . .
THEY LOWER MAINTENANCE COSTS

They Measure The Low Flows . . .

It has been estimated that between 25% and 50% of the total water used by the average household is consumed at rates of less than 1 g.p.m. It follows that if these flows were accurately measured, a considerable increase in revenue could be obtained.

The Pittsburgh IMO Meter is the solution to the low flow measurement problem. Accuracy of 98% is guaranteed at 1/4 g.p.m.—90% at 1/12 g.p.m.

These accuracy specifications definitely assure increased revenue on any service where the Pittsburgh IMO Meter is installed.

There is no other meter like the Pittsburgh IMO. It has been determined that the Pittsburgh IMO will pay for itself in a comparatively short time through measuring the trickles of water which the conventional meter will not record.

They Retain Their Initial Accuracy . . .

The sustained accuracy of Pittsburgh IMO Meters has been proved in any number of instances. In one specific case a Pittsburgh IMO Meter which had measured over 3,000,000 gallons was torn down and checked with micrometers and calipers. Only infinitesimal wear was evidenced. *The meter tested slightly better on the low flows than when first put into service and accuracy had not changed at rates of flow above 1 g.p.m.* In practically every case where IMO Meters have been put on test by waterworks departments, the *low flow accuracy of the meter increased slightly* after the meter had been subjected to a period of service. The Pittsburgh IMO is the only meter that will retain or better its original accuracy curve after installation.

They Operate Quietly . . .

One of the most pleasing features of the Pittsburgh IMO Meter is its silent operation. Many well known waterworks executives say this silent operation would justify the use of the IMO if it were otherwise no better than ordinary meters.

The Pittsburgh IMO Meter cannot become noisy, because smooth turning rotors, precision-cut to mesh perfectly, replace noisy slapping discs. The rotors revolve with a semi-floating action and water flows through the measuring chamber in a straight line without any turbulence. Wear on rotors or measuring chamber has been shown to be negligible. The basic construction precludes the possibility of the IMO meter ever disturbing the sleep of the householder.

They Lower Maintenance Costs . . .

In addition to the increase in revenue gained through accurate measurement of large and small flows alike, maintenance costs go down with the IMO Meter. This saving results from the unique design of the measuring chamber and its operating rotors. The rotors revolve with a semi-floating action and water flows through the measuring chamber in a straight line, without any turbulence. This design principle greatly increases the life of the working parts as compared with conventional meters and insures longer, trouble-free service. Due to the exact inter-changeability of all IMO parts, it is possible and practical to replace complete measuring chambers, gear trains or registers without removing the meter body from the line and with every assurance that the meter will remain in proof.

Since its introduction, over 800 Customers in 46 States have bought Pittsburgh IMO Meters. To get the complete story, call the nearest branch office or write for Bulletin W-529.

PITTSBURGH EQUITABLE METER COMPANY
MERCO NORDSTROM VALVE CO.
NEW YORK · BUFFALO · PHILADELPHIA · DES MOINES · CHICAGO · COLUMBIA
KANSAS CITY · TULSA · LOS ANGELES *Main Offices* · PITTSBURGH, PA. MEMPHIS · OAKLAND · HOUSTON

Remember PITTSBURGH METERS IMO WHERE OTHERS MEET OUT

The Battle Against Urban Blight

Real Estate Boards Urge Adequate Planning Appropriations

From an address by Walter S. Schmidt, of Cincinnati, past President of the National Association of Real Estate Boards, as Chairman of its Committee on Commercial Districts, at the Association's annual convention, Los Angeles, October 25:

UNLESS we would see the most wanton waste of wealth this country has ever known through destruction of land and building values of business property, it behooves us to understand what is happening to our commercial districts, especially in the older cities, then to apply corrective and protective measures to what now exists and, finally, to adopt constructive policies for the future.

So far as the central business centers are concerned, no consistent policy has been adopted to bring people to them with convenience and celerity. The supplying of new arteries to the districts and by-passes around them for through traffic, the establishment of garage and parking facilities about the perimeter, and other such logical measures, have been left to chance. As a result, except for absolutely 100 per cent locations, the value loss is appalling in many of our principal cities. City planning commissions usually have been too busy studying zoning matters, too lacking in adequate appropriations, to give constructive thought to real planning. Sub-centers have been established repeating the errors of the original central district, and no more foresight has been used in the establishment of neighborhood business centers, which usually grew up in a haphazard manner. There are in the country but four or five examples of well-planned neighborhood store groupings. . . .

It is equally necessary to take drastic steps in the matter of blight in the residential sections surrounding the various business districts. We cannot afford to waste this created wealth in buildings and in public facilities provided at great cost to serve these territories. What is gone beyond repair of course should be destroyed, and sound plans made for rebuilding the area. A program should be inaugurated to rejuvenate what is capable of restoration and to make such residential regions attractive and decent for normal human habitation.

Government — municipal and Federal—should be helpful to private enterprise to this end. Government itself cannot do the job without destroying our civilization.

Initial suggestions made by the Committee on Commercial Districts, which is opening a long-term study of the economics of business-area planning, may be summarized as follows:

1. Every city should make a complete real estate inventory and keep it continually current.

2. Traffic conditions should be studied by experts as part of the planning work, and satisfactory provisions made for arteries, public transportation, parking facilities and by-passes around congested areas.

3. Adequate appropriations for planning commissions should be made, and comprehensive plans prepared.

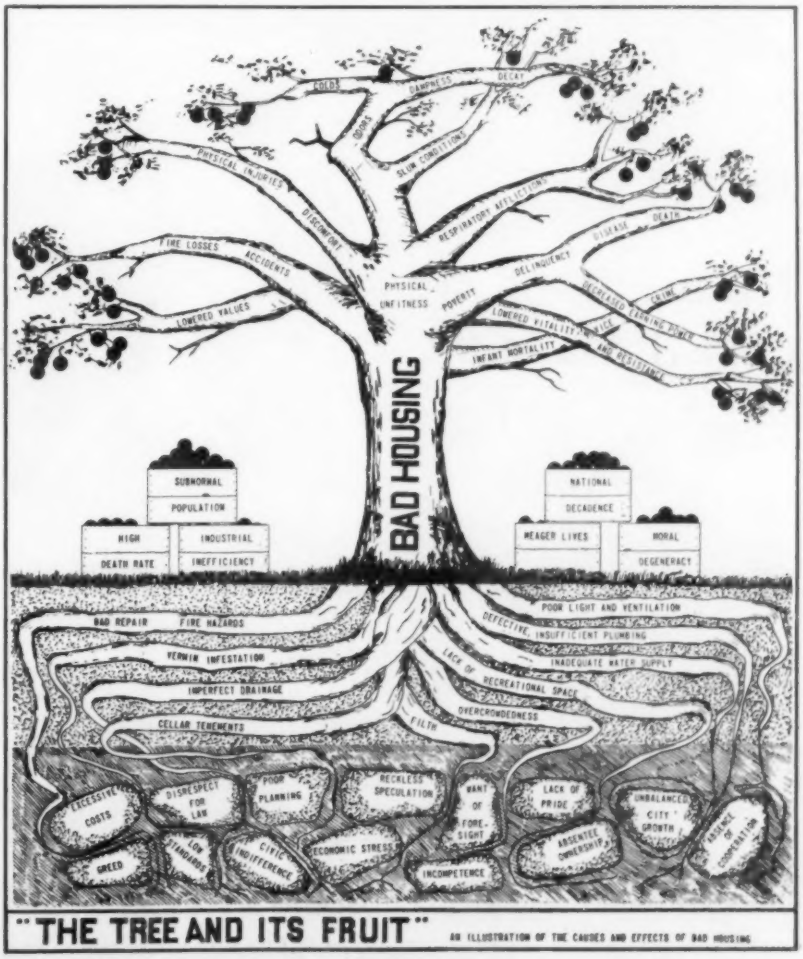
4. Determine the relationship between pedestrian traffic and buying; the conclusions arrived at by determining the correlationship will have almost the force of economic laws.

5. Combat legislation improperly detrimental to commercial districts or to the business in them; such legislation contributes to raising the cost of distribution, already a great weakness in our economic system, as well as damaging commercial districts.

6. Advocate measures for improving atttractiveness, whether by way of removal of unsightly signs, etc., or by remodeling limitation of building heights, etc.

7. Induce cooperative action between merchants and owners for the improving of shopping centers.

The Roots and the Fruits of Bad Housing



A Chart Originated by the Bureau of Housing and Sanitation of the Los Angeles Department of Health

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is your snow removal equipment ready?

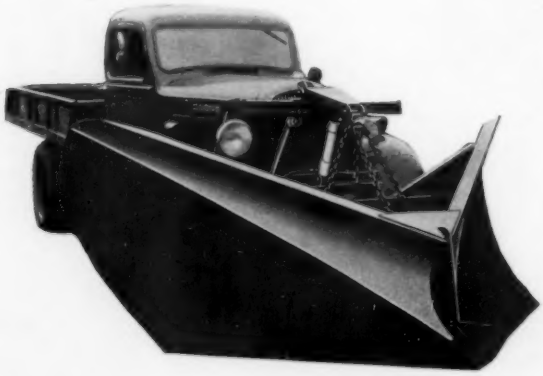
Check your requirements today and write for a catalog of "Good Roads Champion Snow Plows and Spreaders."

There's a model and type for every need, priced to fit any budget.

Our engineers are at your service

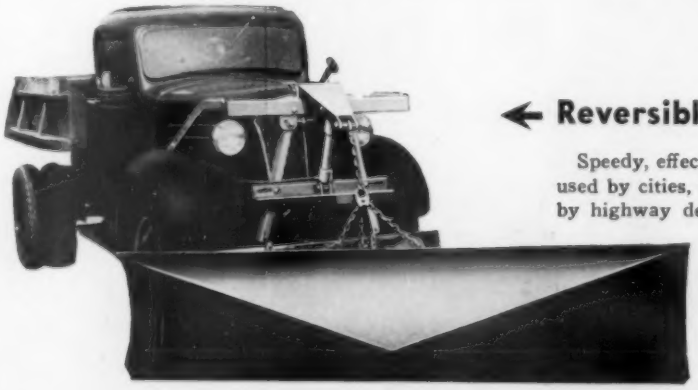
← V-Plow with Plow-Mounted Wings

Designed for use with trucks and wheel-type tractors. A heavy-duty plow built to buck drifts and do general plowing in deep snow. The plow-mounted wings are hydraulically controlled. Designed in sizes for 1½ to 6-ton trucks shown.



Medium Weight V-Plow →

The plow at right is an efficient V-type plow for use with 1½ to 3-ton trucks. This plow is excellent for highway plowing in snow of moderate depth, and for use by private estates, schools, cemeteries, institutions and industrial plants.



← Reversible Blade Plows

Speedy, effective in snow of medium depth. Widely used by cities, industrial plants, cemeteries, etc. Used by highway departments in fleets to keep highways open during storms and to clean up after large V plows have broken through.

GOOD ROADS MACHINERY CORPORATION

KENNETT SQUARE, PENNSYLVANIA

Our Municipal Notebook

Have You Seen a Traffic Doctor?

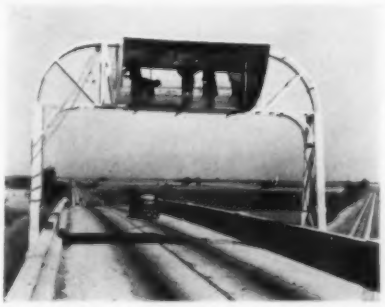
TRAFFIC safety is mechanized to a degree not readily appreciated. Just as the dangerous element of traffic is a machine, numberless machines, known as motor vehicles, so the control and facilitation element also is a machine consisting of a multitude of individual devices all aimed to make each motorist and his vehicle a separate and distinct item in the traffic flow or congestion.

The modest center line has, especially in the last four years, multiplied into a more or less elaborate system of markings to show where to keep in line, where to pass and to turn, to park, to be specifically careful, as when approaching schools and railroad crossings. Machines have been developed, such as the Traf-O-Mark and South Bend, which paint the right width quickly and truly. Satisfactory permanent markers have been developed, such as the tight-holding rubber-composition Crown highway marker used around the big Public Service bus terminal in Newark, N. J.

If all the glorified buggy trails of the country could be erased and a new system of roads laid out to fit the requirements of 30,000,000 motor vehicles, the divided highway would undoubtedly be universally used. As this gargantuan change-over is impractical, the next best measure is to show the motorist by bright, clear markings the correct and safest ways to navigate.

The Prismo Safety Corporation, of Huntingdon, Pa., offers such a marking in three forms: a material consisting of a waterproof fiber on which minute glass spheres are baked in a binder which grips the spheres, the binder furnishing the color and the spheres reflectorizing the material; fiber glass in 2 x 4-foot sheets in standard colors; paint and glass beads for striping. The first material comes in 50-yard rolls of almost any width desired for application to the backs of trucks and vertical surfaces such as poles, posts, guard-rails and abutments. The number fonts are in fiber glass. For striping, a gallon of paint and 6 pounds of beads provide a 4-inch line 300 feet long. These products are used by the cities of Albany, N. Y., Harrisburg, Pa., and Akron, Cleveland, Columbus, Dayton, Lima and Newark in Ohio. The spray type striper with air curtains, made by the Kelly-Cresswell Co., of Xenia, Ohio, is said to be especially efficient in placing the paint and beads on streets and on runways, as at the Cleveland and Washington airports, where the border and center strips are three 6-inch stripes 6 inches apart.

The wide-paved road with bright, clear markings still contains hazards—the hill for instance. For the center line is only a warning and a plea, and only the motorcycle siren can provide strict assurance that the markings will be observed. Many a motorist on a hill wonders what is approaching on the other face. The prismatic lens of a Traffiscope placed on the hill will give him a view of 2,000 feet ahead including over the hill. If the particular hill is a hazard that must be removed, then the cost of the Traffiscope can be set against the cost of excavation and land damage. The state highway departments of Minnesota, Connecticut, Illinois and Pennsylvania have some experience with installations of this device.



Traffiscope on Illinois Highway Bridge

Over the hill may also be a city, with streets, numerous intersections, a business district. Three main urban traffic problems are through traffic, parking congestion, and residential intersections. Where possible, the through traffic should of course be by-passed, with traffic signals and safety lighting, possibly vapor lighting, along this artery. Intersections along this artery are not necessarily the hazard they are in the residential areas where cars need to crawl along apprehensively. At these comparatively infrequented but always dangerous intersections, a sodium light plus some sort of reflectorized warning of headlights approaching on the transverse street is needed—and the danger is present in the daytime too. In the business district, parking meters, permanent markings, traffic signals and modern street lighting should make traffic orderly and smooth-flowing.

Next to finally, comes the car itself. An increasing number of garages and service stations are installing testing machines, and it seems reasonable to expect that as the availability and value of this testing service becomes known, motorists will have their brakes, steering, wheel alignment and headlights tested as a matter of course and with some degree of regularity. Municipalities with their fleet of cars, motorcycles, special apparatus and trucks may find it useful to have their own testing equipment—not only to forestall possible accidents, but also to catch defects in time to save excessive maintenance and repair costs. The Bear Mfg. Co. recommends for this purpose a scuff detector, headlight tester, alignment rack, wheel straightener, and dynamic wheel balancer. It is said that 75 per cent of cars have their wheels out of alignment. At the lowest rates for commercial work, a city of 10,000 is likely to spend enough for this service to pay for a rack in five years.

The job of the traffic authority is much like that of a modern physician—to prescribe correctly the products that have been developed to combat the ills which he is called in to cure. When the skillful traffic engineer makes the greatest use of his pharmacopoeia of traffic devices, he tends to resolve the traffic problem into its final equation—the driver and the pedestrians as human beings.

Topping Turbine Lowers Municipal Power Costs

AT A NUMBER of municipal and industrial steam-electric plants, the topping turbine is gathering increasing popularity. Say you have six boilers delivering steam at 200 pounds pressure to three condensing turbines, and you need more capacity. Instead of installing another boiler and turbine of the same type, you put in a modern boiler operating at 600 pounds pressure and a modern turbine that can take its steam flow, exhausting at 200 pounds pressure into the old steam line. This is termed a topping turbine. Its exhaust steam permits you to cut out three of the old boilers. The result is increased efficiency and lower operating costs, providing a larger surplus or permitting lower rates. This may not apply at your steam-electric plant, but it is worth while to find out by an engineering study whether or not it does.

The MORSE FILTER PLANT

THE Morse Plant is a modern, highly efficient unit individually engineered to fit your specific water filtration requirements. The wide versatility of this unit is comparable to that of Horton elevated water tanks, in that they are designed to meet local requirements. For information, please address our nearest office. No obligation on your part.

Right: **Interior view of the Morse Filter Plant at Bristol, Conn.**

Here's what you get:

1. All-steel construction offers the same advantages that have proved so desirable in water storage tanks. No seepage, no cracking, less maintenance expense.
2. Requires less ground space per unit of capacity than any other type of construction. (A 5 m.g.d. unit, for example, measures only 100 ft. in diameter.)
3. Modern. Definitely designed to push obsolescence as far into the future as possible. Rapid sand type filter bed.
4. Install units as required. Put in capacity needed at present; add more capacity easily and economically at any time in the future.
5. Flexible operation. Filters and basins operate independent of each other. Rate easily increased or decreased to meet requirements.
6. Lower operating costs. Very small loss of head through plant means lower pumping cost. Cleaning and maintenance is easier and quicker.

Below: **Exterior view of the Bristol unit. It has a capacity of 5 m.g.d.**

CHICAGO BRIDGE & IRON COMPANY

Chicago	2127 Old Colony Bldg.	Philadelphia	1616 "1700" Walnut St. Bldg.	San Francisco	1033 Rialto Bldg.
New York	3308-165 Broadway Bldg.	Boston	1501 Consolidated Gas Bldg.	Houston	2919 Main Street
Cleveland	2236 Rockefeller Bldg.	Birmingham	1502 N. Fiftieth Street	Tulsa	1625 Hunt Bldg.
Detroit	1501 Lafayette Bldg.	Dallas	1406 Liberty Bank Bldg.	Los Angeles	1403 Wm. Fox Bldg.

Fabricating plants in CHICAGO, BIRMINGHAM, and GREENVILLE, PA.

Water-Works Construction and Valuation

A Scene During the Construction of the Now Completed Water-Storage Reservoir at Canton, Ill.

Canton, Ill., Builds Dam for New Water Supply

THE CITY OF CANTON, ILL., has completed a new dam to form a lake to provide a new and ample water supply. The lake when filled will be 400 acres in extent, and the depth of water will average 35 feet. The finished earth dam is 53 feet high, 700 feet long and 325 feet wide at the base. The material necessary for the construction, together with forming the bottom and sides of the reservoir, made it necessary to excavate 178,000 yards, 40 per cent of which was hard blue clay. All the material had to be scarified before it was loaded by the scrapers.

The contractors on the job, Swords-McDougal Co. of Peoria, Ill., finished the work in nine weeks, using three D8s, a diesel Seventy-Five, a D4 and two old Sixties, teamed with bulldozers, carrying scrapers, tampers and rooters.

Theories of Valuation of Water-Works Properties

AMONG THE FEDERAL AND STATE courts and regulatory commissions there are two principal schools of thought in regard to valuation of water-works properties, one favoring the "fair present value" theory and the other the "prudent investment" theory.

"Fair present value" as a rate base has been established as the "law of the land" by numerous decisions of the United States Supreme Court, beginning in 1898. In accordance with the rulings of the Court, a public utility is entitled to charge rates that will yield a reasonable return on the "fair value" of the property devoted to the use of the public, provided that such a return can be earned by rates that are reasonable in the light of the worth of the service. The value referred to is value at the time when the service is being rendered. It must be fixed after due consideration of all relevant facts in each case. In most cases the important elements in determining fair value are the actual cost, the estimated reproduction cost, the condition of the property with reference to accrued depreciation, the financial history of the utility in operation, and its prospects for the immediate future, as indicated by trends of prices and business.

The "prudent investment" theory, on the other hand, has never been sanctioned by Federal courts, although several public service commissions have favored it as the basis for establishing rates. This theory calls for a rate determined by the use of costs prudently incurred, or, if complete records are not available, costs which probably were, or should have been, incurred. In other words, valuation on the prudent-investment basis involves determination of the actual, proper, original cost. In contrast to the "fair value," the amount prudently invested is a relatively definite measure of value.

There is a third, relatively small, group which favors the depreciated reproduction cost as the value of a property.

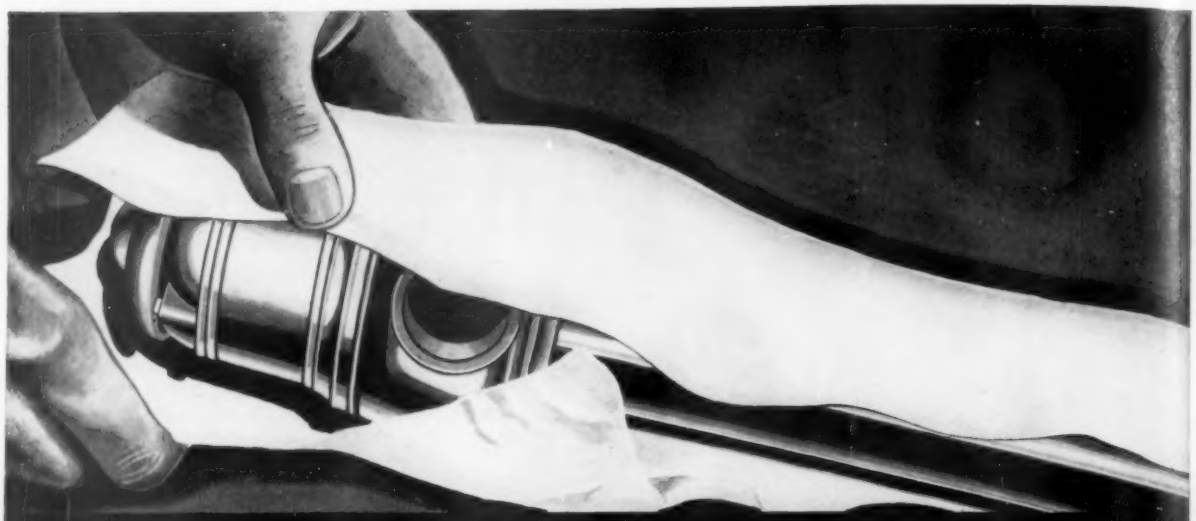
There is a decided difference of opinion as to whether "fair present value" or "prudent investment" should be the basis of public utility valuation. Several state commissions use "prudent investment," while others prefer it but do not use it, because they feel that it is contrary to the decisions of the United States Supreme Court. Ever since 1923, it has been apparent that a minority of the Supreme Court believes that "prudent investment" should be the basis of valuation. There is, at the present time, a valuation case pending before the Supreme Court, in which the Attorney-General of the United States has argued that a re-examination of the fair-value rules should be made and that "prudent investment" should be adopted as the rate base.

It is quite evident that the question of valuation is still a perplexing problem. It is most difficult for an engineer to advise a client as to the value of a utility, because, regardless of the engineer's opinion as to the correct method of valuation, there is such a difference of opinion among courts and commissions. The determination of the value of a property is an embarrassing question, as a member of the highest court has said.

—From a paper presented by John P. Wentworth, Metcalf & Eddy, consulting engineers, Boston, Mass., before the American Water Works Association.

Attend the National Water-Works Conventions and Your State or District Meetings. (See page 115.)

Laying Nearly 40 Miles of 39-Inch Diameter Concrete Lined Pipe in 24-Foot Lengths, with D6 Tractor Equipped with Trackson Side Booms, for the Singapore Municipality Water Department in the Malay States



"Wrap me up A NEW WELL & PUMP"

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Layne enjoys the distinction of being the world's largest —and most widely experienced well water system developing organization. Thus qualified by experience and reputation they are prepared to do the job complete; drill the wells of proper size and depth, case correctly to protect and prolong your water supply, install the right kind and size of pumps and set motors and control apparatus. In brief, they deliver your well water system complete, tested and in operation, producing the required amount, or in excess of your water needs.

Send for bulletins which more fully explain this outstanding service. They may be obtained free. Address

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LAYNE-NORTHERN CO. . MISHAWAKA, IND.
LAYNE-LOUISIANA CO. LAKE CHARLES, LA.
LAYNE-NEW YORK CO. . NEW YORK CITY, AND PITTSBURGH . . . . . PA.
LAYNE-NORTHWEST CO. MILWAUKEE, WIS.
LAYNE-OHIO CO. . . . COLUMBUS, OHIO
LAYNE-TEXAS CO. . . . HOUSTON AND DALLAS . . . . . TEXAS.
LAYNE-WESTERN CO., KANSAS CITY, MO. CHICAGO, ILL. . . . OMAHA, NEBRASKA
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FOR MUNICIPALITIES • INDUSTRIES • RAILROADS • MINES AND IRRIGATION

Airports and Aviation

Indianapolis Builds Airport for Federal Air Authority

THE CITY of Indianapolis, Ind., has built a new experimental station and airport for the exclusive use of the Civil Aeronautics Authority in testing aids to air navigation and safety equipment for aircraft. It was formally turned over to the Authority in special ceremonies at the airport on May 29, 1939.

The new experimental station and airport, on which construction was started a year ago, is situated just west of the Indianapolis Municipal Airport on part of a 1,000-acre tract which the city originally set aside for airport purposes. The landing field has two 4,000-foot runways, providing for landings in four directions. The combined hangar and shop is 150 x 120 feet, with a two-story space 30 x 120 feet for extra shops and offices. Both field and hangar were built in accordance with C.A.A. specifications.

At present the experimental equipment at the station consists of a completely developed instrument landing system, an ultra-high-frequency radio range, and a runway equipped with systems of landing lights designed to provide better visual assistance to pilots in bad-weather landings.

Two experimental airplanes are assigned to the station, one a Waco with tricycle landing gear used mainly for the ultra-high-frequency radio work, and the other a Stinson equipped with conventional landing gear used in the instrument landing work.

The acquisition of the station has made it possible for the Authority to speed up the study of airport lighting, particularly with regard to the illumination of runways in bad weather.

C.A.A. Recommends That U. S. Develop Airports

THE Civil Aeronautics Authority has recommended to Congress in its recent report that the Federal Government assume responsibility for the adequate development of a national system of airports. Three scales of development are proposed. The first involves an expenditure of $128,000,000 to bring to "a properly high standard of quality" the airports now designated as air-mail stops. There are 236 such points, although 170 were actually receiving service on January 1.

To extend adequate airport development to some 860 airports would cost $230,000,000. A completely adequate airport development program for about 3,500 airports, as compared to 2,174 existing airports and intermediate fields, would cost an estimated $435,000,000. This would place an airport within thirty minutes' drive of every reasonably compact population group of as many as 5,000 persons.

The survey made by the Civil Aeronautics Authority, for purposes of analysis and recommendation, separates airports into four classes, the first with runway lengths of 1,500 feet, second 2,500 feet, third 3,500 feet, and fourth 4,500 feet, and makes other stipulations regarding the number of runways and equipment. The survey points out that there is not a single fourth-class airport at present operating in the United States, that there are only 36 in the third class, and 178 in the second. About seven-eighths of all existing airports are either in the lowest class or not able to meet even these specifications.

Extension of Airways Under Federal Program

OF interest to every municipality with an airport is the announcement that on May 1 the Civil Aeronautics Authority added 1,500 miles of new airways to the Federal Airways System at a cost of $2,000,000. This was in addition to the completion on April 1 of the $5,000,000 modernization program begun 1½ years ago. Announcement was also made that contracts will be let soon for about 2,000 more miles of airways, including beacon lights and emergency landing fields.

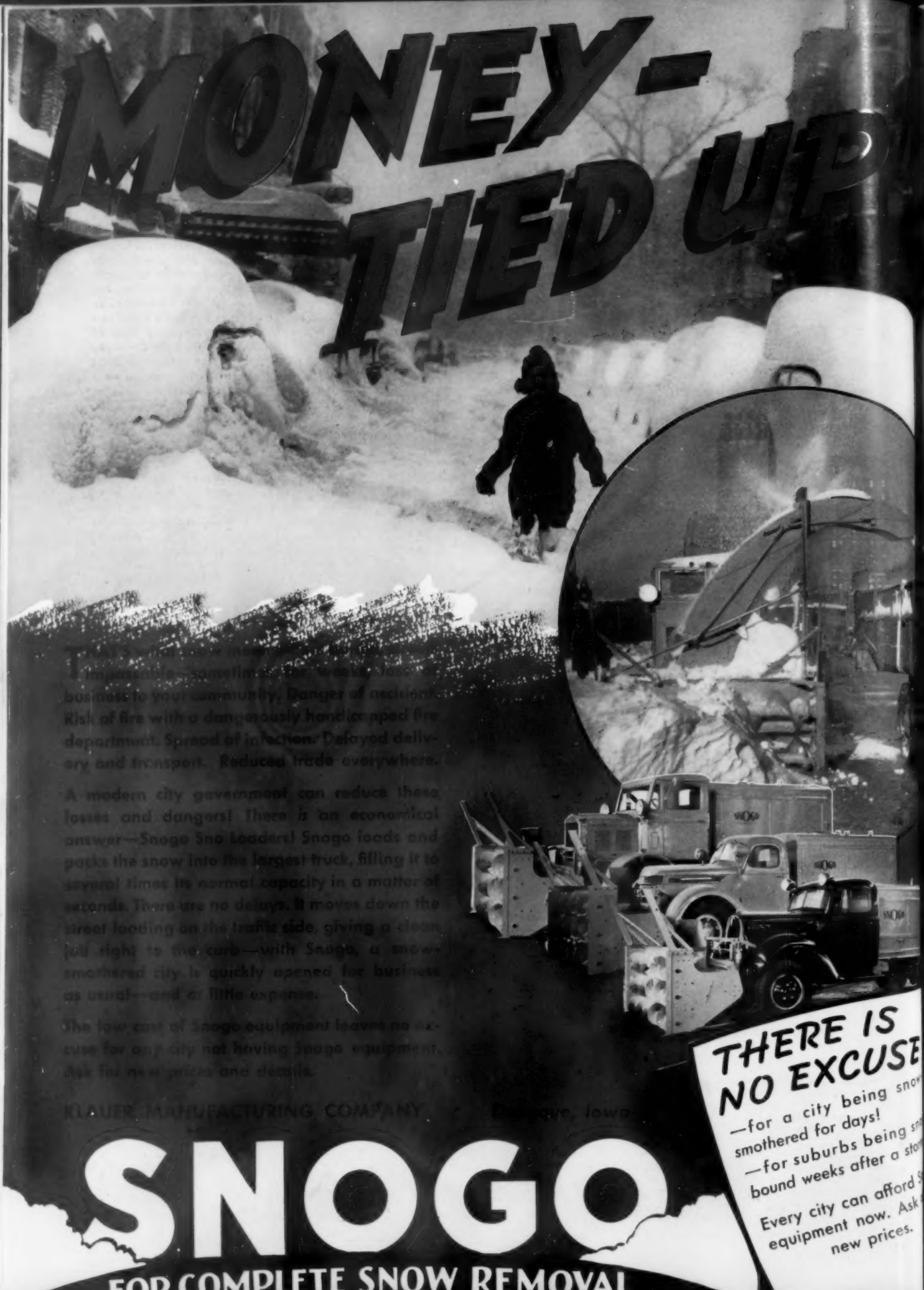
The Federal Airways System now covers 25,500 miles, which is greater in length than any other system with like facilities for radio and visual aids to navigation. The system includes 231 radio range stations, 100 ultra-high frequency cone of silence markers, 21 ultra-high frequency fan markers, the latter devices enabling a pilot definitely to fix his position on a radio range, and the modernization of all the full-power radio ranges upon the new simultaneous voice-range plan.

In addition, 150 radio range stations, which hitherto lacked them, have been equipped with specially devised gasoline engine-driven generators to provide standby power in the event of the failure of commercial power sources at the range stations. Such a failure automatically cranks up the standby power, throwing on necessary switches to make the change, and keeps the standby power on for ten minutes after the commercial power has been restored. As a result, radio range operators will no longer be faced with the necessity of two- to ten-mile trips under storm conditions from control rooms to transmitter stations when power goes off.

STATUS OF AIRPORTS AND LANDING FIELDS BY STATES, JULY 1, 1939
From the Civil Aeronautics Authority

	Municipal	Commercial	CAA	Auxiliary	Navy	Army	Miscellaneous Government, Private and State	Totals	Partially or Fully Lighted
Alabama	11	2	6	14	0	2	2	37	12
Alaska	1	7	0	117	0	0	0	125	2
Arizona	9	7	8	18	0	1	0	43	15
Arkansas	12	2	4	6	0	0	2	26	8
California	52	43	16	36	5	5	12	169	62
Colorado	12	2	2	15	0	0	0	31	6
Connecticut	7	6	1	3	0	0	1	18	7
Delaware	1	3	0	0	0	1	1	6	3
Dist. of Columbia	0	1	0	0	1	1	0	3	3
Florida	37	14	3	65	5	2	8	134	28
Georgia	21	3	10	16	0	1	0	51	19
Idaho	19	0	8	10	0	0	9	46	12
Illinois	14	30	6	1	0	2	3	56	28
Indiana	14	19	6	6	0	2	3	50	19
Iowa	15	8	3	5	0	0	2	33	11
Kansas	19	6	4	7	0	2	1	39	15
Kentucky	8	1	3	6	0	1	1	20	4
Louisiana	12	1	3	5	0	1	5	27	9
Maine	10	5	0	6	0	0	1	22	6
Maryland	2	8	1	1	1	3	3	19	9
Massachusetts	8	24	1	6	2	0	0	41	11
Michigan	55	12	0	19	1	3	34	124	24
Minnesota	12	4	2	10	0	1	1	30	9
Mississippi	14	0	6	10	1	0	0	31	14
Missouri	10	6	13	4	0	0	3	36	19
Montana	26	0	12	23	0	0	11	72	19
Nebraska	15	5	4	3	0	2	0	29	14
Nevada	3	3	8	7	1	0	0	22	12
New Hampshire	8	4	0	2	0	0	0	14	4
New Jersey	4	12	0	2	2	1	1	22	8
New Mexico	4	5	10	11	0	0	4	34	13
New York	24	29	4	15	0	5	12	89	26
North Carolina	16	6	2	6	0	1	0	31	10
North Dakota	16	5	7	11	0	0	0	39	11
Ohio	29	37	9	19	0	3	15	112	26
Oklahoma	22	4	7	5	0	1	2	41	22
Oregon	13	2	9	7	0	0	2	33	17
Pennsylvania	21	57	7	11	1	1	11	109	34
Rhode Island	0	2	0	3	1	0	2	8	1
South Carolina	12	3	3	7	2	0	2	29	7
South Dakota	19	2	0	5	0	0	1	27	0
Tennessee	9	1	8	3	0	0	0	21	14
Texas	54	13	27	29	0	9	6	138	51
Utah	6	1	11	3	0	0	0	21	14
Vermont	6	2	0	3	0	1	0	12	1
Virginia	11	13	7	8	3	1	1	44	17
Washington	23	7	6	6	1	4	4	51	17
West Virginia	11	6	0	6	0	0	1	24	4
Wisconsin	23	20	4	3	0	0	3	53	18
Wyoming	10	1	11	12	0	0	0	34	15
Totals	760	454	262	596	27	57	170	2,326	739

MONEY-TIED UP



THERE IS NO EXCUSE

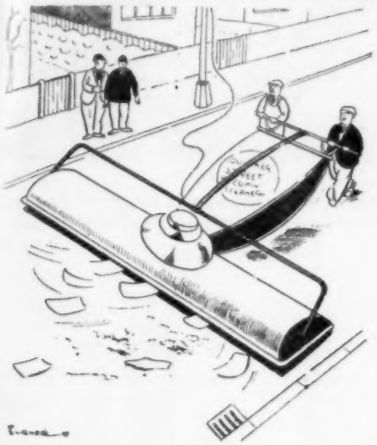
—for a city being snow
smothered for days!
—for suburbs being sn
bound weeks after a sto

Every city can afford S
equipment now. Ask
new prices.

SNOGO

FOR COMPLETE SNOW REMOVAL

Street Cleaning—Leaves and Snow Ahead



FROM LOCAL GOVERNMENT SERVICE, LONDON, ENGLAND

"Yep, the new Cleansing Chief was a vacuum salesman"

Street Cleaning and Sweeping in London, Ontario

THE CLEANING OF IMPROVED STREETS and sweeping of paved streets in London, Ont., are charged to the property owners fronting on these streets. The rates for 1938 were 2 cents and 4 cents per foot for street cleaning, and 5 cents, 7 cents and 10 cents per foot frontage for pavement sweeping, depending upon the amount of cleaning and the number of times the pavements were flushed.

Removing Leaves from Gutters and Streets

A DISCUSSION at the 45th Annual Convention of the American Public Works Association devoted primarily to street cleaning led into the discussion of the removal of leaves from city streets and gutters in the fall. This discussion brought out the experience of a number of cities, which will be of interest and helpful to our readers.

In Minneapolis leaves are taken care of by the street cleaning crews and held out with the street sweepings. In Winnetka, Ill., they are picked up by the Elgin street sweeper, deposited with other street refuse and hauled away by the follow-up truck.

In Tampa, Fla., as has been previously mentioned in THE AMERICAN CITY, the leaves are picked up by the street sweeper and then delivered to nearby house owners or tenants who have answered a previous advertisement in the local paper. These people use them for mulching, and in each of the past two years over 1,100 loads of leaves have been delivered to the nearest address from the place where they were picked up.

In Washington, D. C., there are 170,000 curb trees. Large gangs of men and big trucks are used for the removal of leaves in the fall. Baskets are used to scoop up the leaves and they are disposed of by dumping and delivery to many householders for private compost piles.

A Speed Maintainer Removing Snow from the Streets of West Allis, Wis.

In Ann Arbor the leaves are put through a hammer mill and go to the digesters with the sewage sludge.

Meadville, Pa., permits burning the leaves on its brick streets. They are windrowed with a rotary broom and then burned when dry.

In Montclair, N. J., a group of push-brooms are attached to a wood plow in front of the trucks to gather the leaves in large piles for more easy handling to trucks for final disposal.

Clearing Snow Last Winter on the West Side Highway, New York City, With a Rotary Broom on a Motor Grader

ELEMENTS of PUBLIC SAFETY

GAMEWELL

Fire Alarm

POLICE
Signaling Systems

Increase the efficiency of the police department, protect the patrolmen, and promote public safety by using the Gamewell System which ensures (1) Adequate patrol and inspection of all municipal areas in the manner prescribed by the chief, (2) Routine report signals at regular intervals, and the facility for transmitting emergency signals when patrolmen need immediate assistance, (3) Secret intercommunicating telephone service between each patrol station, the central station, the detective bureau, and all other telephones connected with the system, (4) An automatic and permanent record of report and emergency signals including the location from which transmitted and the exact time and date thereof, (5) Facility for calling patrolmen, individually or collectively, to the patrol boxes to receive instructions by telephone from headquarters.

Police Signal

Write for information and estimates

THE GAMEWELL COMPANY

NEWTON UPPER FALLS MASSACHUSETTS

Public Safety

Forestall Fire Loss

During the Last 34 Years an engineering study of the more than 400 larger cities of America, by the National Board of Fire Underwriters, has been under way, with repeated visits to each city, after each of which a comprehensive report is issued and furnished to the city. These reports cover the outstanding hazards and physical and structural conditions of the community in addition to the adequacy and reliability of the fire protection features, and include recommendations which, in the opinion of the fire protection engineer, will produce conditions lessening the probability of destruction by fire.

Though conflagrations produce an outstanding loss reaching into millions of dollars, there are in each of the larger cities a few individual fires which in the sum total account for 50 to 70 per cent of the annual loss in these cities. Structural conditions are such that these large individual losses are possible and probable in practically every business block and manufacturing plant in many of these cities, and in all of them there are numerous blocks and areas where a serious individual fire cannot only occur, but would endanger other structures in the city.

Many cities where there has been no serious fire for a number of years, and where the fire departments have easily extinguished small fires, have so reduced their fire departments that they cannot cope effectively with a serious fire and prevent it from spreading.

Some of the common features which have contributed largely to the fire loss throughout cities and towns are, briefly:

Excessive areas of buildings of non-fireproof construction. — These often have doors and windows on only one or two sides, with the result that the fire department cannot effectively reach the burning interior.

Excessive height of buildings.—A fire stream has little penetrating ability inside a building except where it can be played nearly horizontally through a window or door; fire in the higher stories therefore cannot be effectively fought from the ground; and, because of danger to the firemen from collapsing floors, interior fire fighting is not feasible.

Open elevators and stairways form chimneys which permit the rapid upward spread of fire.

Seriously exposed window openings. —Radiating heat and billows of flame readily spread fire from one building to another where windows are unprotected by shutters or wired glass, especially where the separating distance is less than 50 feet.

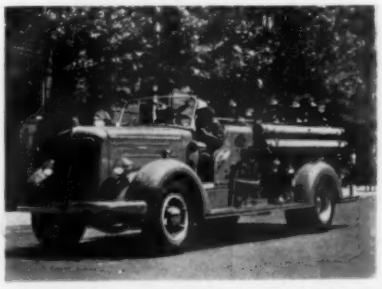
Probably the most effective means of mitigating all these defects is to install a complete system of automatic sprinkler protection. Of great value also is the automatic fire-alarm system, with central-station operation and supervision. Studies show that the quick discovery of fire is almost as important as proper structural conditions. Both of these types of systems provide for early notification of a fire. It is evident that the individual and the collective governmental interests of every community might well thoroughly survey the structural features of the important buildings with a view to lessening the conflagration hazard.

George W. Booth,
Chief Engineer, National Board of Fire Underwriters, N. Y.

Longest Fire Engine Run

A Piece of Fire Apparatus with 5,870 miles on its speedometer would normally be 15 to 20 years old, and anyway beyond the retirement age. While mileage is not the usual type of laurel which pumpers collect, a new Mack Type 80 has just done 5,870 miles from coast to coast.

Starting from the New York World's Fair on August 12, it arrived at the Golden Gate International Exposition on September 20, en route extinguishing a brush fire in New Jersey, passing through 200 cities in 17 states, and making overnight stops in 24 of the cities.



Nearly 6,000 Miles Put on This Pumping Engine in 1½ Months' Run

Colonel Arthur B. Hickox, with a crew of six men, drove it in the interest of nation-wide fire prevention, using Texaco Fire Chief gasoline.

Quick Dewatering with Portable Pump

When Water Is Where it does not belong, as in a cellar or excavation, it must be removed, and one of the most efficient ways to remove it is to pump it out at the rate of 15,000 gallons per hour with a Homelite portable 3-inch self-priming centrifugal pump. This pump, weighing only 91 pounds with built-in gasoline engine, is one of the most useful machines carried by the rescue trucks of the pioneer Newark, N. J., Motor Patrol Bureau, headed by Captain Frank A. O'Neill. With practical facility, it pumps either clear or very muddy water.

A Homelite Portable Pump Making a Cellar Habitable Again

The Newark bureau also owns pumps of the Portable Light Co., shown on page 55 of the October issue of The American City but incorrectly called Homelite pumps on page 54.

Mayor Praises Parking Meters

Following Study and Approval by the Chamber of Commerce, Glens Falls installed 263 parking meters, covering a large portion of the business district.

All business fears proved baseless. It was predicted that outsiders would not come to Glens Falls to shop. They continue to come; and only 1 per cent of the motorists violate the ordinance. Where three or four policemen formerly made hourly rounds, one man on a motorcycle now makes several rounds per hour. Where there are no rear loading facilities, trucks are permitted eight minutes' loading time.

Double parking has been cut.
All-day parking has disappeared.
There is no cruising.
Traffic flow has increased.

When it comes to regulating parking, Mayor Stickney says, "I believe parking meters will be found to be the major solution."

THE SURE, LOW COST WAY OF REMOVING HIGHWAY ICE AND SNOW

INTERNATIONAL'S ROCK SALT

Left—A safe street is East Avenue, Rochester, N. Y. Small amounts of Rock Salt without abrasives, were used according to proven methods, and the street was then plowed. No packed snow or ice remains. The street is bare—and *Safe!*

Above—A side street in Rochester, N. Y., photographed from its intersection with East Avenue (see picture at left). Straight Rock Salt was used at the intersection, and the street is bare and safe. Beyond the point where Rock Salt was used, the hard-packed snow — even on this side street — defied the plow.

STREET and road officials now know that scattering grits and abrasives over an icy surface is not enough to satisfy the increasing public demand for *safer* streets and highways in winter. The public knows as well as public officials, that ice and snow are dangerous to traffic so long as they remain on a pavement.

The International Salt Engineering Department has worked for many years in close co-operation with street and road engineers, superintendents and maintenance men. This work has developed new methods for using Rock Salt to clear ice and snow from pavements—methods that are not only practical but also highly economical.

International places the benefit of all its long experience at the disposal of any state road engineer or city street official, without cost or obligation. Ask for a consultation. Find out what others are doing, in practically every state. Discover why some northern cities have prosperous business in the winter, while their neighbors suffer from roads and streets made dangerous by hard-packed snow and ice. Discover how economical it is to make highways and streets really safe by clearing them with new Rock Salt methods. International's Retsof and Detroit brands of Rock Salt are equally economical. Write for a copy of an attractive folder showing how pavements are made really safe.

POUNDS OF ICE MELTED PER POUND OF CHEMICAL
Maintenance Committee, Highway Research Board Vol. 13

Temperature Deg. F.	Sodium Chloride (Salt)	77-80 percent Flake Calcium Chloride
30°	46.3 lbs. of ice	31.1 lbs. of ice
25°	14.4 lbs. of ice	10.4 lbs. of ice
20°	8.6 lbs. of ice	6.8 lbs. of ice
15°	6.3 lbs. of ice	5.5 lbs. of ice
10°	4.9 lbs. of ice	4.8 lbs. of ice
5°	4.1 lbs. of ice	4.4 lbs. of ice
0°	3.7 lbs. of ice	4.0 lbs. of ice
—6.5°	3.2 lbs. of ice	3.7 lbs. of ice

ADVANTAGES OF SODIUM CHLORIDE AS CALCULATED BY INTERNATIONAL SALT COMPANY, INC.

	48.9%
	38.4%
	26.4%
	14.5%
	2.0%
—	6.8%
—	7.5%
—	13.5%

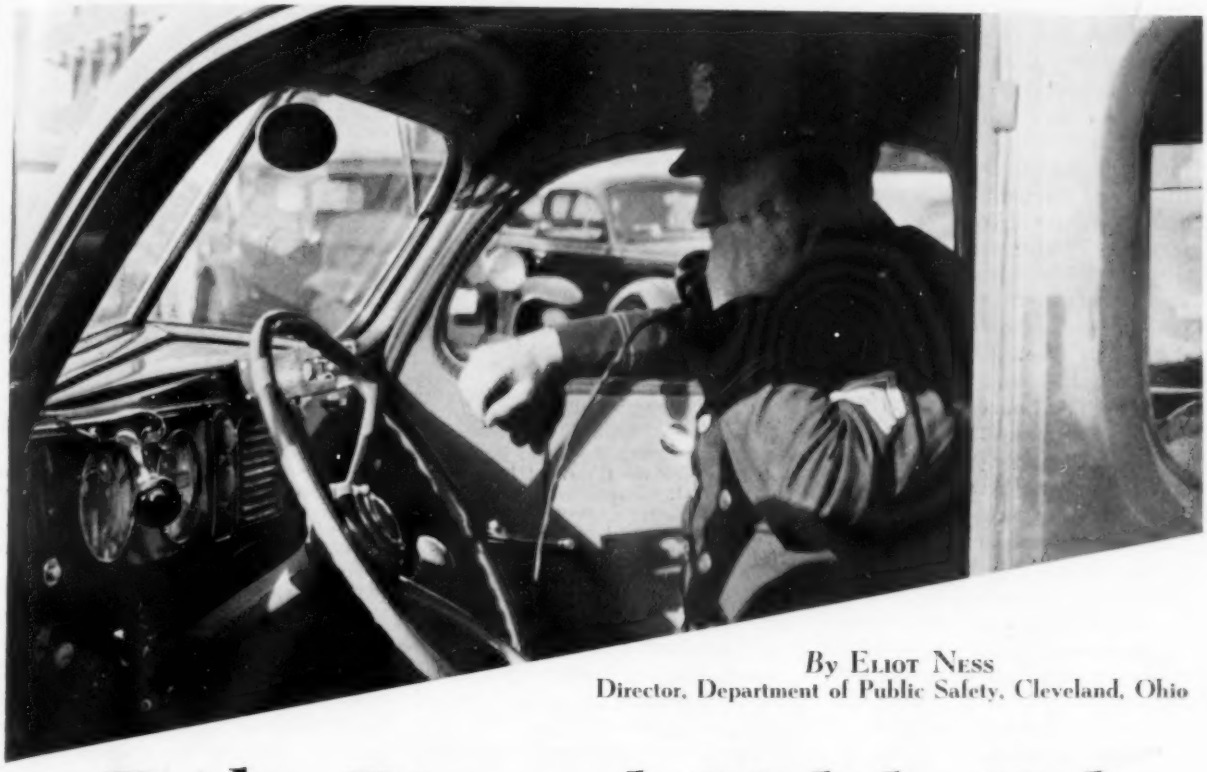
WHY INTERNATIONAL'S ROCK SALT IS SO ECONOMICAL WITH THIS METHOD

Because of its great melting power, Rock Salt is most economical for use in treating stock piles of abrasives to keep them from freezing, and in treating abrasives so that they will be imbedded in ice. For the same reason, Rock Salt used alone is the most economical melting agent to *remove* ice and hard-packed snow. A little does much. In addition, this method saves: cost of abrasives, cost of treating, storing, reloading and applying them; the cost of removing them from roads and streets, sewers and basins later; damage to pavements by abrasives; and, since proper use of straight Rock Salt corrects all effects of storms with one treatment, saves the cost of treatments with abrasives several times a day for several days. No wonder public officials say:

"It costs less to keep pavements bare."

INTERNATIONAL SALT COMPANY, Inc.
SCRANTON, PA. NEW YORK, N. Y.

Vol. LIV, No. 11 The American City NOVEMBER, 1939



By Eliot Ness
Director, Department of Public Safety, Cleveland, Ohio

Radio-Directed Mobile Police

CLEVELAND reduced traffic fatalities 47 per cent, and non-fatal accidents 32 per cent, in 1938. The downward trend is still going on, with a further decrease in fatalities of 20 per cent and 14 per cent in non-fatal accidents for the first nine months of 1939, as compared with the corresponding period of 1938. This significant achievement is the result of a planned police program of safety education and the active cooperation of motorists, pedestrians and various civic groups and organizations interested in promoting greater safety.

Communications and Patrol System

The communications of the entire department were consolidated and centralized, making this new division the very nerve center of the Police Department, instead of an adjunct. The centralization and intensive utilization of two-way radio, radio-telegraph, teletype and tele-typewriter increased the speed and efficiency of police communications beyond anything believed possible.

Along with this reorganization, the patrol system was modernized and a fast, efficient fleet of 32 new tricolored Ford sedans, equipped with RCA two-way radio systems, was put into operation in December, 1938. These cars constitute the basic patrol, and they patrol the city 24 hours a day in three 8-hour shifts (7 A.M.-3 P.M.; 3 P.M.-11 P.M.; 11 P.M.-7 A.M.). These hours, however, are subject to change and tend to conform to the principle of "selective enforcement." Each car is manned by a crew of three in charge of a sergeant, and is able to reach any point in its district in a maximum time limit of two minutes. The city is geographically divided into five districts and thirty-two zones. There is one car assigned to each zone, and each district is in charge of a captain. Once on the road, all radio cars are subject to the orders of the officer in command of radio broadcasting.

At the same time that the new radio patrol system was set up, an Accident Prevention Bureau was established, specifically designed to cope with accidents intelligently and scientifically. This was done with the aid of the Safety Division of the International Association of Chiefs of Police, under the direction of Lieut. Frank M. Kreml. The city was divided into ten districts (geographic) and an accident prevention car with a crew of two officers was assigned to each district. Like the basic patrol cars, they are 1938 Ford sedans, distinctly marked with the regular red, blue and cream tricolor design, and are equipped with two-way radio systems. Each car carries as standard equipment a complete photo-

graphic outfit, a typewriter, instruments to test brakes and measure skid marks, crow-bar, broom, shovel, night-flares, blankets, first-aid kit and other implements useful in accident work.

The accident prevention cars operate entirely on the basis of "selective enforcement"—that all accidents do not occur in regular intervals at points all over the city; rather, they occur at certain places, times and hours most frequently and may be attributed to certain factors. Thus, since it was found that the 8-hour period of 4 P.M.-12 P.M. was the heaviest accident period, more cars were put on this shift than on any other. These were supplemented by motorcycle patrols. The hours 8 A.M.-4 P.M. were found to be the next heaviest and were therefore given a proportional number of cars. Hence, today, all sixteen accident prevention cars are on duty 4-12 P.M., eleven on duty 8 A.M.—4 P.M. and only eight on duty 12 P.M.-8 A.M., the lightest period. These assignments, however, are subject to constant change as indicated by the accident statistics, and closely follow the recommendations of the selective enforcement program.

The establishment of an emergency mobile patrol was another alteration in increasing the efficiency of the Police Department. Twelve standard International Model D-2 panel body trucks serve as combination ambulance and patrol units. Each vehicle is equipped with a radio receiving set and full ambulance facilities, including cot, first-aid kit, inhalator and stretcher, and is manned by two officers skilled in safety practices and in the administration of first-aid. Folding, cushioned side-seats provide for the carrying of passengers when the truck serves in its patrol capacity; eight policemen can easily be transported in case of emergency duty.

Bureau of Public Relations

One of the most important of the new safety developments has been the Bureau of Public Relations, whose function is to educate the public in matters of traffic safety and to promote the good-will of the citizens. The activities of the Bureau embrace the whole field of safety education. Talks on safety are made to public gatherings by police officers. Parades are sponsored, and the cooperation of the newspapers and the radio stations is solicited by the Bureau. In 1938, over 9,000 public addresses were arranged by the Bureau, covering churches, schools, parent-teacher groups, and social and industrial organizations. Nearly 80,000 posters were displayed in this safety program, and 1,179,000 pieces of safety literature distributed. To supplement these posters and safety literature, more than 2,500 slides and safety films were shown in theaters and at public gatherings. Safety contests were held and, to impress the public with the seriousness of traffic accidents, a solemn service was held on Public Square—a memorial to the 130 traffic dead of Cleveland.

At upper left the Cleveland Emergency Patrol is life-saving with an H-H inhalator; at upper right, the crew of the red, blue and cream radio patrol, with the second officer from left holding a Speed Graphic camera and at his feet a Royal Portable typewriter; at lower left, the RCA radio equipment that gives purpose and direction to all the mobile police, including those on the 30 Harley-Davidson motorcycles of the type at the right

Safety Contest

To encourage the men in the Police Department themselves in promoting traffic safety, a safety contest was held among the various districts, sponsored by the Cleveland Safety Council. This year, a city-wide safety contest was inaugurated among the wards of Cleveland, with each councilman assuming the leadership of the safety campaign within his ward. The three leading daily newspapers and the Cleveland Safety Council are cooperating in sponsoring this contest, and its initial success has already attracted nation-wide attention and interest.

Saving in Insurance

Already a significant change has resulted in the insurance rates in Cleveland. Starting in 1936, rates on automobile insurance have been reduced between 19-30 per cent, and, effective April 24, 1939, further reductions of 20-25 per cent went into force. Moreover, automobile owners in Cleveland have had many rebates on their insurance, which were greatly appreciated. Approximately a million dollars was saved in insurance premiums alone in 1938, and the Cleveland Safety Council estimated that the change in our method brought about a saving of 3½ million dollars to the community.

Last year's safety record won Cleveland the National Safety Award, and it is the firm intention of the city's Police Department and the citizens to retain this title permanently. Accidents to date in 1939 are far under last year's figures.

EDITORIAL NOTE.—In a second article in a later issue, Director Eliot Ness will explain in detail the whys, wherefores and whithers of the profound changes that have been made in the Cleveland Police Department.

Aeration and Iron Removal for Small Water Supply

Simplicity of Construction and Operating Efficiency of Plant at Blue Earth, Minn.

IF simplicity and economy of construction and efficiency of operation are still the criteria of effective expenditure of public funds, the Water and Light Department of Blue Earth deserves commendation. Also, the officials in charge of the water works in this city of only 3,500 population are delighted that their work has proved so successful that it has been copied by a number of cities larger than itself for the removal of bad tastes and red-water troubles.

Before the installation of the present aerating system, the water from the dead ends of the system was unbearable in taste; and if a hydrant was opened to furnish water for any purpose whatsoever, the increased flow so stirred up the sediment in the mains that there were complaints from customers for blocks around. Now this has ended, dead ends are free of bad tastes, and the water runs as clear from a hydrant opened full stream as from the smallest faucet in the system.

Deep-Well Supply

There are several wells in the system, but at present a single well is able to supply the entire needs of the community. This well has a 20-inch casing for 155 feet to shale rock, then a 16-inch casing to hard rock a total distance of 210 feet. The well is then driven to a total depth of 384 feet in sandstone and limestone. It is pumped with a Pomona pump and has been in service for 2½ years, delivering 550 gpm. The output is measured by a Bailey meter installed in the small brick pump-house at the well.

The operation of the well pump is entirely automatic when the master switch is thrown at the municipal power plant about two blocks away. The idea is to use power for pumping on the off-peak hours of the city demand. Therefore, the high-pressure pumps in the aerator building are actually controlled from the power plant by starting when the water in the 100,000-gallon elevated storage tank in the center of the town is low. The high-pressure pumps take suction from the small filtered water tank beneath the filters, and as soon as the water drops in this tank a float-controlled switch starts the well pump automatically, and similarly shuts off the well pump when the filtered water tank is filled. The high-lift pumps are stopped by a switch controlled by the operators in the municipal power plant.

The well water contains considerable hydrogen sulphide, from 0.3 to 1.0 ppm of iron as iron carbonate and about 62 ppm of CO_2. Before the present treatment was installed, the iron in the water drawn from the taps throughout the city contained up to 4 ppm of iron, and upon standing a few minutes in a glass the water turned cloudy, and finally red flakes of iron oxide settled in the glass. All bathroom and toilet fixtures were stained with the iron, but with the simple method now in use this condition has been cleared up.

Aeration and Iron Removal

The aeration building is only a few feet from the well being used at the present time. It is a brick structure of pleasing architecture, with two windows in each of three sides equipped with louvres and with air filters to keep out dust and insects. There is also a vent at the top which turns with the wind, so that the air being drawn in naturally, as well as the forced aeration, is always removed "down wind."

The well pump delivers the water to the top of a series of trays above a four-section sand filter. There are four pans at the top of the aerator, one over each section of the filter; then beneath them a pair of pans at either side and another pair under each of these, making seven pans in each section, over the edge of which the water spills in a thin stream as well as flowing through small holes in the edges and bottom, breaking up the water as much as possible, for the principle of aeration is the exposure of the largest surface of the water to the air. Each pan measures 4 x 5 feet. The water falls a distance of 8 feet in the aeration process, which completely removes all trace

The Aeration and Filter Building, and the Pump-House at the Right, Blue Earth, Minn.

of the hydrogen sulphide and reduces the CO_2 to below 3 ppm. The iron also is reduced slightly, but the important result is that the CO_2 removal throws the small amount of iron in the well water out of solution, so that it can be removed on the filters.

A fan installed in the outer or pump-room section of the aeration building, and also equipped with air filters of spun glass which are washed twice a year and are installed double for full efficiency, forces air into the many fine streams of water flowing in the aerator and increases the efficiency of natural aeration. This fan is used only in summer during periods of maximum water demand.

The filters are a single welded iron tank with partitions dividing it into four sections 6 x 20 feet each for convenience in operation and washing. Each section contains 12 inches of coarse gravel over a perforated false bottom, and above this 24 inches of filter sand. The false bottom is 12 inches from the bottom of the tank, forming the small filtered water tank for the storage of water for the high-lift pumps. The total storage amounts to 35,000 gallons.

The washing of the filters is done one section at a time by a back flow of water from the city mains, using the pressure of the tank at the plant. One or two sections are washed each week, and the blood-red wash water is allowed to flow to the city sewer. A maximum of 750,000 gallons per day has been put through the filters.

The high-pressure pumps consist of an installation of one 600- and one 500-gpm Worthington centrifugals with 40- and 30-hp Westinghouse motors respectively.

The city of Blue Earth has about 10 miles of cast iron mains varying in size from 4-inch to 8-inch. It has its own very efficient steam power plant, which also supplies central steam heating for a large portion of the city. The power for the water system pumping is supplied by the municipal plant at cost. The aeration plant complete with the high-pressure pumping equipment cost the city $11,000, a sum representing only a small portion of the monetary value of the improvement to the citizens.

The plans for the water-treatment plant were adopted after much study and experimental research by Axel Moline, Superintendent of the Light and Water Plant, in collaboration with W. A. Eckles, graduate civil engineer of Cornell, and senior member, Board of Public Works.

High Court Ends Tax Raid Case

THE United States Supreme Court has put a period to the celebrated Pillsbury Academy tax case. (See THE AMERICAN CITY for April, 1939, page 54.) On October 9 the high tribunal denied the Academy's appeal for review of a Minnesota Supreme Court decision holding that properties of the school not used for educational purposes are subject to state taxes.

The ruling ended a four-year fight by Hennepin County authorities to keep Minneapolis income-producing property (at one time valued as high as $500,000) on the tax rolls. The Academy, located at Owatonna, Minn., claimed exemption under a charter granted by the Minnesota Territorial Legislature in 1854 to Minnesota Central University, to which Pillsbury Academy asserted it was legal successor.

The battle was precipitated by the discovery that owners of Minneapolis real estate had donated valuable parcels to the school under an agreement that they were to receive life annuities, the property to be returned if the annuities were not paid.

Two District Courts in Minnesota (Steel County and Hennepin County) in 1937 upheld the school's contention, but the Minnesota Supreme Court reversed them on February 3, 1939. In August Minnesota's Attorney General, J. A. A. Burnquist, ordered all real estate holdings of the Academy not used for educational purposes placed on the tax rolls for 1939, but ruled that no taxes could be levied pending final action by the United States Supreme Court.

If this device for removing property from the tax rolls had been validated, the immediate effect would have been to deprive Minnesota of considerable revenue. But its ultimate influence might have reached much farther—by providing a pattern to be followed in many other communities.

The underlying merits of the case, however, were not argued before the high court; its action was confined to denying the appeal for review.

Physical and Fiscal Planning

METHODS of execution are quite as important as methods of design. If local governments are to continue to justify their existence, if community responsibility and self-rule are to continue to prevail, then there must be evidence both of ability to plan in a far-reaching and comprehensive manner for the needs of the community, and of the strength to carry out the program with economy, efficiency, and stability.

Long-term planning involves attention to every feature of the physical needs of a community. Each needed improvement must be considered in its relation to all other improvements, and with regard for both individual and community welfare. But, regardless of how perfect the physical plan may be, unless its economic phases are likewise considered it must ultimately fail. We may plan the most beautiful and well-located parks and recreation systems, a perfect balance between business and residential needs, fine schools and libraries, adequate streets and other general facilities, yet unless adequate and dependable financial resources are provided, no part of the physical plan can be carried out. . . .

Of all problems of government, finance affects each citizen the most directly and the most vitally. Unless there is intelligent financial administration, public undertakings cannot succeed. Indeed, an economic disaster may follow which will result in poorer physical conditions than those which formerly prevailed, as witness to which many poorly conceived and partially completed developments stand in mute testimony. For these reasons it is of the utmost importance that, with consideration of the physical side of community planning, its financial implications and requirements, as to resources and methods, be considered.

—From an address on "Municipal Budgets for Capital Improvement," by Lloyd Morey, Comptroller and Professor of Accountancy, University of Illinois, published in the *University of Illinois Bulletin* for August 18, 1939.

"Fair Deal" Traffic Violation Court

By HUGH G. CORBETT
Secretary, La Crosse County Chamber of Commerce,
La Crosse, Wis.

FINDING that traffic laws were missing their objectives in the majority of cases because they were administered under a code designed for peace disturbers and criminals, Municipal Court Judge George P. Ruediger of La Crosse has established a new "Fair Deal" Court which aims mainly to eliminate fines in favor of traffic law education and instruction in motor-vehicle operation. He has found, after a ten-year study and survey, that approximately 90 per cent of the fines paid in his court were for infractions which were neither dangerous to property or persons, nor a menace to safety on streets in La Crosse, a city of nearly 45,000 population. This has led him to the opinion that:

"In cases where person or property is not endangered or damaged, people should be given a first and a second opportunity to correct themselves, for the greater number of offenses result from drivers lacking proper knowledge of traffic laws, rather than from their attempts to deliberately disregard the laws. Most people try to be observing and don't intentionally violate a law. They cannot be encouraged to co-operate in a campaign of observance when they are governed and fined as are peace disturbers and criminals."

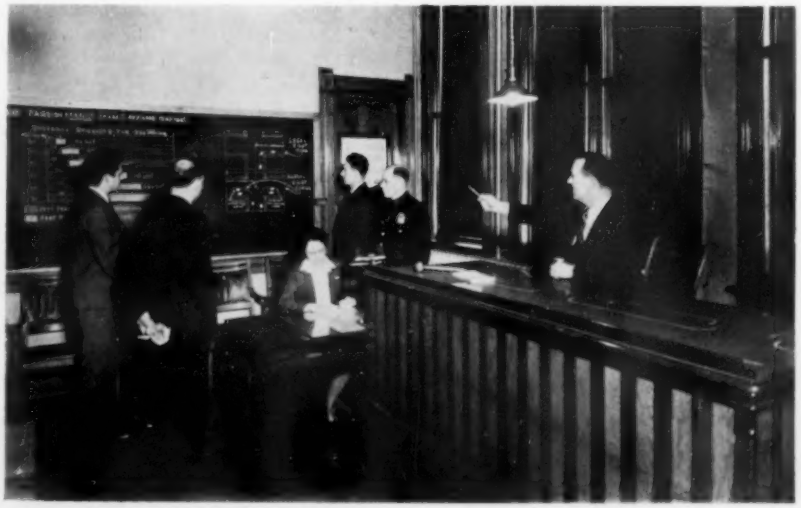
In classifying the types of violations, Judge Ruediger makes a sharp distinction between the inadvertent, non-dangerous violator and the person who recklessly ignores the rights and safety of others. Each violation falls into one of three classes—"Class A," "Moving," or "Parking."

"Class A" violations, which are considered inexcusable and which constitute approximately 10 per cent of the offenses, are punishable on the first and on every subsequent offense with a fine, while "Moving" and "Parking" violations are punishable only on the third and on subsequent violations. "Moving" violations are all those which occur while the vehicle is in motion, but exclusive of those listed in "Class A"; "Parking" violations are those which take place when the vehicle is parked, but exclusive of those listed in "Class A."

Under the new program, which seeks to attain a maximum of traffic safety with the least amount of expense and inconvenience to the public, a motorist can run through an arterial highway sign or park overtime in a time-limited parking zone, along with committing other similar minor offenses, twice without paying a fine, because these violations do not fall into those the judge has listed in "Class A."

"Our diligence in the prevention of violations and accidents is far more important to the men, women and children of the community which we serve than any amount of money that can be collected in fines," Judge Ruediger says in defense of his program.

Regardless of the classification of a violation, the motorist is requested, each time, to appear in court, where he prepares in his own handwriting two copies of a "courtesy record," a questionnaire form designed by the judge containing a complete history of the violation. On all second appearances in court, the violator is compelled to attend



Educating a Traffic Violator in the La Crosse Fair Deal Court

COURTESY RECORD

LAST NAME	FIRST NAME		DATE	
RES. AD.—STREET	CITY		STATE	TEL.
BUS. AD.—STREET	CITY		STATE	TEL.
DRIVER'S LIC. NUMBER	WIS. OR FOREIGN	WAS IT EVER REVOKED?		
MAKE OF CAR	YEAR	MODEL	CAR LIC. NUMBER	
OWNER'S NAME AND AD.				
DATE OF VIOLATION	TIME	A.M. P.M.	LOCATION	
NATURE OF VIOLATION				
OFFICERS' NAMES			TICKET NUMBER	
DID YOU PREPARE A COURTESY RECORD PREVIOUS TO THIS?				

YOUR SIGNATURE IS FOR IDENTIFICATION AND IS NOT AN ADMISSION OF GUILT

PLEASE SIGN HERE

DO NOT WRITE BELOW THIS LINE

DISPOSITION:

THANK YOU FOR YOUR COOPERATION IN PREPARING THIS STATEMENT

GEORGE P. RUEDIGER,
POLICE JUSTICE FOR THE CITY OF LA CROSSE, WIS.

The City of La Crosse

To All Drivers, Riders, and Pedestrians:

WHAT CAUSES ACCIDENTS

Traffic accidents do not happen. They are CAUSED by the violation of at least one traffic law by at least one person.

HOW TO PREVENT ACCIDENTS

Drivers, riders, and pedestrians who have a thorough knowledge of all traffic regulations and carefully observe all of them all of the time can never cause an accident.

THE RESULT OF NON-OBSERVANCE OF RULES

Non-observance of a traffic rule, however slight, can result in serious injury, loss of limb, death, and damage to property.

SET A GOOD EXAMPLE

You may never have been in an accident but you play an important part in preventing them. Many people follow your example because they regard you highly. Are you setting a good example?

TAKE PRIDE IN OBSERVING TRAFFIC RULES

Be proud to let others know that you observe all of the traffic rules all of the time. Be proud of that fact that you always slow down when you see children, or when you drive in the vicinity of a school. Be proud that you are helping to save lives in the City of La Crosse. Be proud that you are doing your part to make the streets safer for other drivers, riders, children, and pedestrians.

HOW TO OBTAIN COPY OF TRAFFIC RULES

It is suggested that you ask for a copy of the pamphlet containing the traffic rules at the Court Room of the Police Justice in the City Hall. It is free. Then why not study it with the other members of your family. Solicit their support in our campaign of observance.

WHERE AND WHEN TO GET INFORMATION

You may want a traffic rule clarified. You may want to report an habitual and dangerous violator who seems never to get caught. You may have a valuable suggestion for the improvement of traffic safety. You are cordially invited to discuss matters such as these with the Police Justice at the Court Room in the City Hall any week-day morning at 8:30 A.M.

Courtesy Record, and Message to Drivers, Riders and Pedestrians, from Police Justice Ruediger, La Crosse, Wis.; Printed on Two Sides of a Sheet

a night traffic clinic held regularly by Judge Ruediger. Copies of all courtesy records are filed by the Court for permanent reference.

All violators have an opportunity to explain their side of the case in a personal chat with the judge, in addition to previous violations, if any, before they leave the courtroom. Each violator gets the original copy of the courtesy record to keep, as well as a copy of the traffic laws and a motor-vehicle guide, so that he can study traffic laws and automobile operation.

Important psychology exists in the Judge's procedure. The preparation of one's own court record is unusual and remains unforgotten. Returning the original to the violator gives him additional time to read it and reflect. Knowledge that a copy is on record in the Court, the Judge believes, often results in a resolution that it shall be the last. Offenders leave the courtroom in a cheerful mood and with greater respect for the law and for those who apply it, after having been shown courteous treatment and given friendly advice.

La Crosse, because of its size and location, is a buying center for many southwestern Wisconsin, northeastern Iowa and southeastern Minnesota residents, and by promoting his liberal traffic program, embracing greater fairness and leniency, Judge Ruediger has encouraged noticeable added patronage.

The new procedure is not intended to minimize traffic officers' efforts to use their customary diligence in detecting violations and issuing tickets; instead, the program seeks to promote fairness, to foster the friendliness of the public and to secure the cooperation of all drivers, riders, children and pedestrians in a campaign of observance for greater safety.

"Class A" offenses, grouped by Judge Ruediger, for which the violator is penalized by fine on the first and on each subsequent violation, are as follows:

1. Failure to obey the lawful order of a police officer or fireman at or near a fire or other emergency.
2. Driving while under the influence of intoxicating liquor or a narcotic drug.
3. Driving while subject to epilepsy.
4. Failure to yield right-of-way to an emergency vehicle being operated on official business.
5. Reckless driving.
6. Parking in an alley in a business district, or double parking.
7. Failure to pull over to the curb until an emergency vehicle giving signal by siren has passed.
8. Following an emergency vehicle which is on official business closer than 500 feet, or driving within a block where fire apparatus has stopped in response to an alarm.
9. Parking within 15 feet of the driveway entrance of any fire station or directly across the street from the entrance.
10. Parking on a highway adjacent to the entrance of places of public assemblage, such as schools, churches, theaters, hotels and hospitals.
11. Driving more than 15 miles an hour past a school when children are going to and from school, or when they are playing about the school.

A. I. A. Report Deplores Apathy of Most City Planning Commissions

A 50-YEAR program, calling for the erection of 10,000,000 new homes is needed to provide "decent housing for all the poor," according to a report of the Committee on Housing of the American Institute of Architects, submitted at the Institute's 71st convention, in Washington, D. C., September 27.

"The cold fact is that a comprehensive program of housing over such a period of time as is necessary to provide decent housing for millions not so housed faces failure largely because the income of a large number of our citizens is so low as to make it impossible for them either to own or to rent proper living quarters," said the Committee, of which Dean Walter R. McCornack of the School of Architecture of Massachusetts Institute of Technology is Chairman.

The cost of housing is definitely tending toward the retarding of the whole building industry, and there is ample evidence of rackets in the building industry, the report declared.

"The full realization of the demand for housing to be supplied by private enterprise, and an efficient use of funds for subsidized housing, will be attained only when each and every item of building cost has been reduced to a reasonable level. Obstructive and obsolete local housing laws and codes seem to be on the road to amendment. High hurdles to low cost will remain in land costs, due to the persistence of a speculative rather than an investment attitude toward real estate, in the cost of materials, and in the cost of labor, and in high interest rates, which in turn affect the resulting taxes.

"Labor has shown too little eagerness to cooperate, as was done in England, in the substitution of an annual income for the hourly wage scale for labor's reimbursement. Labor in some localities and trades has been active in that development and perpetuation of the building crafts which would result from a well-organized apprenticeship system.

"We hope that this will become general, for inaction in this direction tends to create a shortage of skilled labor at the building and to increase prefabrication, and this in turn tends to localize, in the region of the fabrication plants, the demand for labor heretofore engaged at the building. This is undesirable except so far as it succeeds in lowering costs.

"Every possible economy, however, in the costs of labor and materials is urged. Prefabrication must be accepted where satisfactory economies in cost can thus be secured, in spite of the dislocation of the labor supply that will result.

"Labor clings to many obsolete practices, such as the jurisdictional strikes, which retard building production and increase its costs."

The report deplores "the apathy of most city planning commissions." The local housing authority is left without much of the data which should be already available and which is necessary to doing a thorough job, data which the authority must either collect or do without, it is asserted.

"The temptation will be to do without, and this may in time act as a boomerang," the report continued. "Housing is still in some quarters being treated as an emergency measure to end the depression; speed is urged, which militates against that study and that deliberation which should accompany each project, in the selection of population to be housed, the site, the design of the project, and particularly its integration in the comprehensive city plan.

"The city administrations should be warned and urged to bring planning boards into action. Since the Federal Government is committed to a long-range housing policy, it should logically cooperate in the preparation of long-range comprehensive city planning."

Well-Designed Maintenance Equipment and Methods at Pasadena, Calif.

Patches of Asphalt and Concrete

Taking a Shovelful of Fine Stone from One of the Truck Bins

STREET repairs are an important activity of a city street department, and attention to the equipment available for either asphalt or concrete patching is an essential detail. In Pasadena a well-designed asphalt repair truck is used which carries stone and asphalt emulsion along with it, while concrete work is handled with a city-owned Rex transit mixer.

Asphalt Repairs

The asphalt repair truck assembled in the city shops consists of a General Motors chassis carrying an independent LeRoi-Rix air compressor with a capacity of 65 cubic feet of air per minute. A 310-gallon emulsion tank is mounted immediately behind the air tank. At the back are three 18-cubic-foot bins for "gun sand," concrete sand, and No. 4 crushed rock. The bins slope backward, leaving a space under them at the forward ends for two tool-boxes.

The discharge of the aggregates is controlled by sliding vertical gates, and the material flows out onto folding aprons at ordinary shovel height. The back of the truck, which is painted yellow for visibility, is striped diagonally with black to prevent anyone from running into it without being fully warned of the diagonal strips by the standard caution sign.

The truck carries 50 feet of 1-inch emulsion hose with a spray nozzle. A rack on the side of the truck is used to carry folding warning signs to be placed on the road when the work is in traffic. The engine exhaust of the truck is carried up vertically in front of the bins so that it is not in the way when backing into tight quarters.

The Concrete Repair Outfit

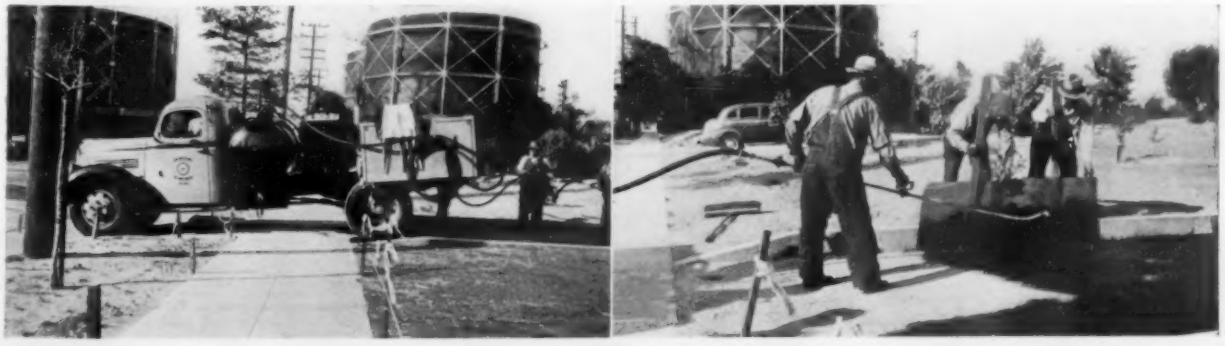
For concrete repairs as well as some concrete construction, the city is well equipped with batching plant and transit mixer. A 6-compartment Butler batching plant with a capacity of 120 tons and equipped with four beam scales is located at the Street Department yards at the bottom of a 30-foot cliff. The aggregates are dumped by trucks into the top of the bunkers from a permanent bridge above. When concrete is needed for patching in any part of the city, the city-owned Rex transit mixer is charged under the weighing batcher plant, cement being added from the second floor of an adjoining warehouse, and water measured through a tank on the mixer. Under one foreman, the transit mixer and four crews are used on concrete patching work.

An Ingersoll-Rand two-stage compressor with a capacity of 105 cubic feet per minute at 100 pounds pressure is used with a crew of two men when breaking out defective sidewalks, curb or gutter. Three cement crews, each consisting of a truck driver, a cement finisher and one laborer, complete the patching. They haul away the broken concrete, set the rules or forms, and finish the concrete. All broken concrete is salvaged for use in making walls, park improvements by WPA workers or prisoners.

During the last fiscal year the following concrete maintenance work was done by these crews:

1,799 lin. ft. of curb @ 0.608	$1,094.69
48,017 sq. ft. of 6-inch gutter @ 0.2235	10,731.80
42,108 sq. ft. of 4-inch sidewalk @ 0.1893	7,971.04
	$19,797.53

Harvey W. Hincks is City Engineer and Superintendent of Streets of Pasadena, Calif. C. Wellington Koiner is City Manager.



Left—The Pavement Maintenance Truck of the Pasadena Engineering Department, Backed into a Driveway to Permit the Pressure Spraying Outfit to Reach to the End. Right—Protecting the Concrete Curb When Spraying

Yorkship Village in 1917 and 1939

By Electus D. Litchfield
Architect, New York

WITH the uncertainty of what recent developments in Europe may mean for America, we should remember how the lack of modern industrial housing crippled the American output of ships and other war material in 1917. Few among the present generation of "housers" seem to be familiar with what the nation did at that time, nor of the advances then made in the planning of low-cost sanitary and efficient housing. Many large-scale and permanent low-cost housing developments were then undertaken, and the largest of them rivals in size any government-aided housing projects which have been undertaken since. Only the Red Hook and Queensbridge projects in New York, now nearing completion, exceed it in the number of persons accommodated.

In her cyclopaedic book on Modern Housing, Catherine Bauer limited her comments on the achievements of American war housing to the following:

> "Some of the War Workers' housing, particularly that at York [sic] and Bridgeport, came up to all minimum requirements."

and

> "The government housing for war workers, particularly that at Bridgeport, Conn., and at Camden, N. J., created almost a sensational precedent in quality of community planning, as well as public responsibility."

Philadelphians cross to Camden almost only when they must entrain for South Jersey resorts, and, as Miss Bauer confessed, she had never seen Yorkship until after the publication of her brilliant book. While its plan and characteristic views did achieve the Encyclopaedia Brittanica, that they are not found in Miss Bauer's housing

Peace-Time Values of War-Time Housing

Before the outbreak of the European war the editor of The American City suggested to Mr. Litchfield that municipal officials and city planners, because of their increasing interest in housing and neighborhood improvement through public initiative, ought to know how America's largest world-war housing project — Yorkship Village — had survived the twenty-two years since its inception.

The article has since been written and is here published with reproductions of several recent photographs. These give visual evidence that lasting community values are obtainable from well-planned housing developments, even when built under the threat or stress of war.

DALLIN AERIAL SURVEYS, PHILADELPHIA

Recent Airplane View, Yorkship Village, Camden, N. J.

Stores and Apartment Houses on Yorkship Square

The Three-House Group—an Interesting End for the Vista

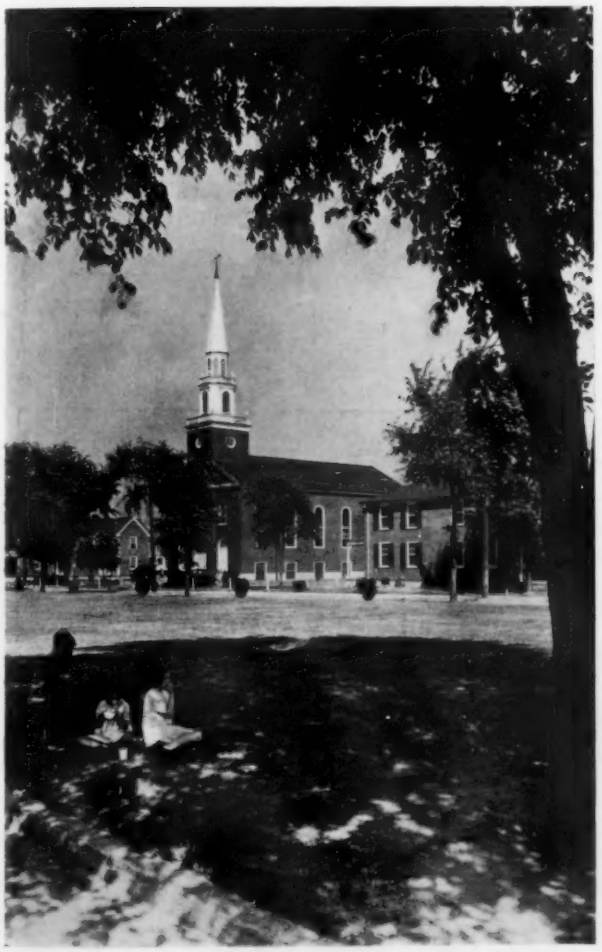
bible, has been one of its planner's greatest disappointments.

Yorkship was planned for 2,000 houses, averaging 5⅓ rooms each. Owing to the signing of the Armistice, not all of these were built, but enough to make it a practically completed town.

The instructions given me in Washington one morning in February, 1917, were exciting in the extreme. In short: "Select with the shipbuilders and the local authorities, a suitable site in Camden, N. J., and produce a town of 2,000 houses, economical but permanent in construction, and so comfortable and otherwise satisfactory as to do away with the labor turnover in the shipyards." The responsibility for design and economy of production were to rest with me. "The town must be ready for occupancy immediately, or as close thereafter as humanly possible."

A recent aeroplane view shows

(Concluded on page 111)



The Church on the Common

One of the Three-Family Groups

FIVE RECENT PHOTOGRAPHS OF YORKSHIP VILLAGE

Yorkship Road, with Mall and Two One-Way Drives

Los Angeles Pushes Work to Improve Conditions in Olympic Boulevard District by

Open Cut and Tunnel for New Storm Drain

TO improve the drainage of approximately 3,500 acres of the central business district of Los Angeles, a new 11½ x 12-foot horseshoe storm sewer is now under construction through clean coarse sand with some fine gravel, for a distance of about 2 miles from Figueroa Street to the Los Angeles River, with an average grade of 0.16 per cent. About 1,460 feet is being built in open cut, while the remainder is tunnel with from 12 to 13 feet cover to minimize possible damage to the numerous buildings along the line and to avoid utilities so far as possible. Nevertheless, it has to cross the main lines of the Santa Fe and the Southern Pacific and several street-car lines.

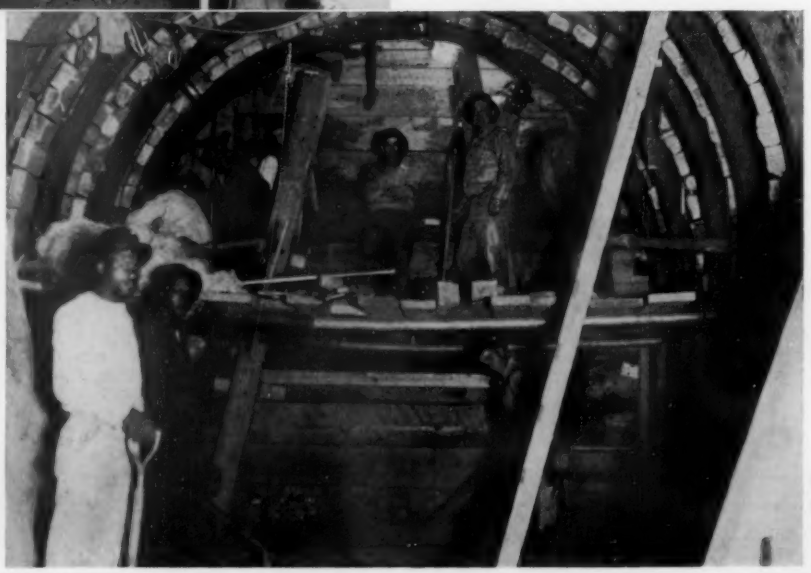
The Tunnel Section

In order to push the tunnel as rapidly as possible, it is being worked from six faces, a pair to each shaft located in the middle of alternate blocks and about 700 feet apart. The heading frames are substantial and equipped with two ladders, one for the men entering and one for the exit. The ¾-yard shaft bucket is raised by an Essick single-drum hoist with a 10-hp motor, and dumps into a 60-yard bin with two traps for loading to hauling trucks. It is interesting to note that the city is saving about $540 a month on the disposal of the spoil by giving the clean sand away to a contractor, who hauls it for his own use. Most of it is going to a local hot-mix plant.

The relief labor crews are showing remarkable skill in handling the work under hard rock foremen who have had experience on the Los Angeles Aqueduct. The superintendence, labor, materials and equipment are furnished by WPA, and the engineering, right-of-way, inspection, electric power and water by the city.

The full-face method is being used for mining the sand, with four timber men, two tunnel workers on

Above—A Full Heading with Breast Boards in Place Ready for Excavation



Right—A Face Half Excavated. Note the Lagging Lumber Outside the I-Beam Ribs

One of the Numerous Shafts on the Olympic Boulevard Storm-Sewer Project, Los Angeles, Calif.

the suspended platform, and two muckers who load and run the cars and pass up lumber to the timber men. In order to meet the weekly hour requirements, the tunnel is being worked in one 8-hour and two 7-hour shifts. The 2 x 6-inch face timbers are braced against the face by heavy trench jacks backed by 2½-inch pipe braces.

Six-inch I-beams spaced 3 feet on centers are used for the ribs, and 6-foot lengths of 3 x 6-inch timber cut diagonally at the end with a Skilsaw to facilitate driving are used for the lagging. The 7.7-pound I-beams have an arched top and are delivered to the job in two sections with 8 x 12 x ⅜-inch plates for joining and for bearing at the base. The footing blocks are 4 x 12 inches and 3 feet long under the ribs, which are tied with a ½-inch bar through a 1-inch water pipe. In addition, 3 x 6's are used as spacers above the pipe spacers. The stage or platform from which the top timber workers operate is made of 2½- and 3-inch pipe suspended by heavy chains from the arched ribs.

The excavation amounts to 9 cubic yards per lineal foot of tunnel, and the crews are making about 2½ feet per shift per head, with about 3 feet as the maximum. The tunnel is well lighted, and after the first 100 feet in each heading blowers were installed for artificial ventilation. All men are furnished with hard hats for protection against timbers, particularly when climbing in or out at the shafts. The lagging is packed with excelsior to prevent running-in of the sand although it generally contains sufficient moisture to stand quite well. The muck cars are narrow-gage and end-dump.

Concreting

The concrete lining will be placed behind steel forms and is 16 inches thick at the crown and down to the spring line, increasing to 25 inches at the invert. The invert is 18 inches thick at the center to 32¾ inches at the walls. All the concrete will be placed by the Pumpcrete method. The concreting amounts to 2.7 cubic yards per foot of tunnel.

The Olympic Boulevard storm sewer is being built under the direction of Lloyd Aldrich, City Engineer, with C. E. G. Wikoff, Division Engineer in charge of inspection, J. F. Burns, Assistant Engineer, and M. D. McManus, Resident Inspector. John Hendrickson is WPA Superintendent in direct charge of operations.

Huge Housing Project in New York

THE Bethlehem Steel Company had erected 28,000 tons of steel at Parkchester, the new apartment community being built by the Metropolitan Life Insurance Company for 40,000 persons in the Bronx, New York City, when this aerial view was taken. The view shows part of the 129-acre tract and the buildings, about 15, nearest completion. Parkchester will house 12,200 families in 51 buildings when completed in about two years. The project calls for 60,000 tons of steel construction. Erection of steel began late in 1938. (See item on the project on p. 67 of THE AMERICAN CITY, Aug., 1938: "Work Starts on Largest Neighborhood Housing Project.")

PHOTO BY MC LAUGHLIN AIR SERVICE

Parkchester, New Apartment Community in The Bronx, New York City

1,500 guests per week are entertained by the Seattle Department of Lighting. The trip to Diablo Dam, below, includes this inclined railway ride; then by boat across Diablo Lake to the Ross Dam shown at the top of the next page

Selling the Skagit to the People

By KATE MULLEN ARCHIBALD

THE Skagit, owned by the city of Seattle, Wash., might have been just another big hydroelectric development. Instead, it has been so dramatized and socialized that it has become also a major tourist attraction and a famed community adventure. The project alone, with its ultimate installed capacity of 1,120,000 horsepower, in its wild mountain setting in the high Cascades 100 and more miles north of Seattle, is well worth a visit. But it has been so embellished with sound, color and lighting effects that it has taken on unreal, thrilling beauty. To the everyday citizens visiting there, it is beauty plus magic.

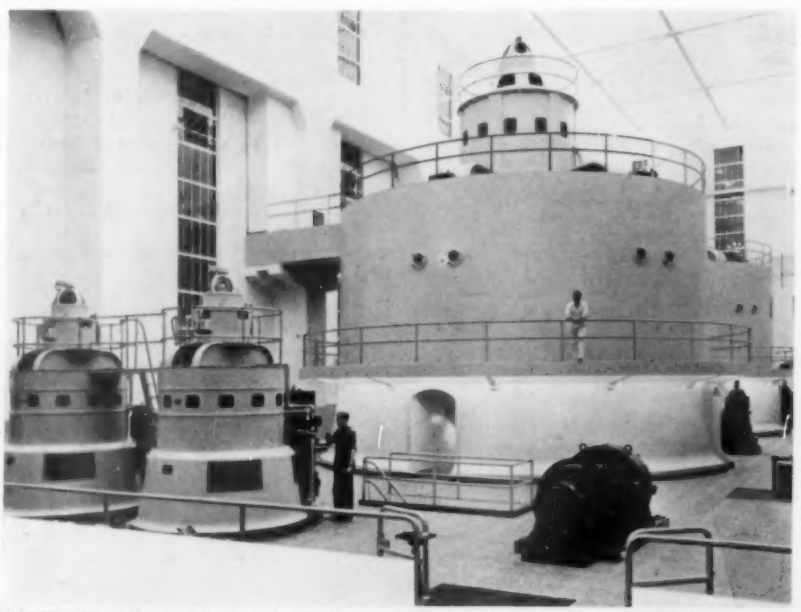
The trips, however, were not a planned experiment. They developed gradually, through the genius — and geniality — of J. D. Ross, Superintendent of City Light and Power. Though Mr. Ross died early in 1939, to "Friends of City Light," organized and unorganized, his life is perpetuated in the Skagit. He was head of City Light practically from the time of its inception in 1902. When he was appointed by President Roosevelt to take over the administration of Bonneville, he asked to keep the administration of Skagit. "Take away Skagit," he said, "and I can't do Bonneville." Trips to the Skagit, citizens of Seattle say, will always go on.

The Skagit trips began in 1926 with the visit there of 27 civic-minded women. Today there are 25,000 in a season, and the number would be doubled except that the entertainment of guests is only a by-product of the City Light Department's business of producing kilowatts.

This is how the trips started. Superintendent Ross, in order to acquaint constituents of City Light with their remote property, was giving lectures, illustrated by stereopticon slides. He had need to do this—urgent need. Although the city was already using power generated in the first unit of the project, not many had faith in building a second, far more costly one. Some who had supported the project had cold feet when they realized the magnitude of the proposed ultimate development. At a lecture one day before the Women's City Club, some one expressed a desire to see the project, and Mr. Ross invited the entire group to come on up.

Such trips grew in favor. Tents had to be provided. Then the barrack-like dormitories were replaced by attractive sleeping quarters with rooms. Today there are accommodations for 500 guests at one time, and three trips are arranged. Reservations are made months ahead, and there is usually a waiting list.

The actual trip begins after a



INTERIOR OF DIABLO POWER HOUSE, SHOWING THE TWO VERTICAL 66,700 KVA WESTINGHOUSE HYDROELECTRIC GENERATORS INSTALLED IN 1936 BY THE SEATTLE LIGHTING DEPARTMENT'S OWN FORCES; TWO MORE WILL BE ADDED

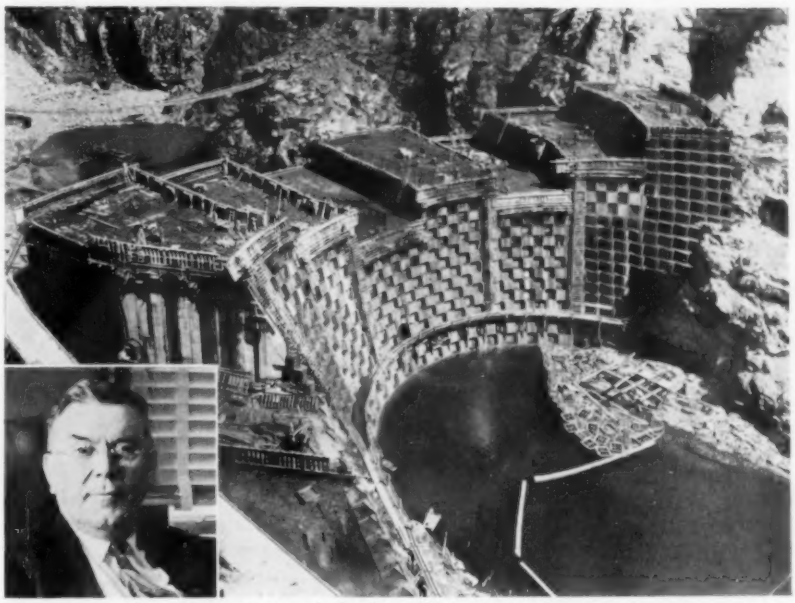
Diablo Dam and power house is the second of three steps in the million-horsepower Skagit development owned by the city of Seattle. The first step was the Gorge wood-crib diversion dam (to be replaced by a masonry dam when the Diablo and Ross plants are finished) and plant completed in 1934-36 with an ultimate capacity of 480,000 hp and a present capacity of 75,000 hp in two 30,000-kw and one 33,000-kw units. The third step is the "keystone" Ross Dam and power plant containing four 90,000-kw vertical units, started in 1939 and to be completed in 1948, with an ultimate of 480,000 hp. In 1938 the Skagit plants produced 94.4% of the total power generated by the Seattle system. System increases in 1938 included 4.7% in production, to a new high; 551 customers, to a total of 97,431; $152,093 in revenue, total $5,859,973, 2,063 electric ranges, to a total of 34,196, maintaining Seattle in first place in number of electric ranges among the cities of the world

100-mile journey by automobile from Seattle, when the little town of Rockport is reached. Automobiles may go no farther. And it may be added that from this point liquor is forbidden. To cover the bare expense of the trip, each person is charged $4.05. Until 1938 it was only $3.00. From now on, the visitor is the guest of "Your City Light." A sense of being treated hospitably begins right at Rockport. Doughnuts and coffee are served without cost at a rustic shelter, and flowers are everywhere. For an hour or so before the train leaves in the afternoon for the project, guests begin to arrive at the little station. Many of them bring lunch, and there are beautiful places where they may eat it in the shade beside the Skagit River.

When it is time to start, the guests crowd into the big open flat cars which take them 23 miles up the canyon of the Skagit River to Newhalem, the administration town of the project. Few company towns are as beautiful as this one, where the guests spend the night. The canyon is narrower here, and the mountains shut in close about the little camp and the power house. Again, flower-beds are everywhere, filled with marigolds, gladiolus, stock, snapdragons, pansies, phlox and all their kindred blossoms, and workers' homes are scattered in among them.

The "Piece de Resistance"

At dusk a short illustrated lecture in the theater building explains each step in the power development—the real meat of the trip. The entire Skagit project will be in three units, each unit to be paid for out of light and power revenues, and each to be built as the needs of the municipality grow. The three units are: the gorge plant at Newhalem, of 320,000 hp; Diablo Dam, 320,000-hp plant and lake; and Ross Dam, 480,000-hp plant and reservoir. This third unit was formerly called Ruby Dam. The reservoir created by Ross Dam will be a lake thirty miles long and one to three miles wide, with three million acre-feet of storage capacity, sufficient to equalize all the run-off of the river for power purposes, which makes this the key to the entire development.



Ross Dam under construction; and the late Chief, about whom W. J. McKeen, Acting Superintendent of Lighting, Seattle, says: "The Lighting Department and the community suffered an irreparable loss in the untimely death of our beloved Superintendent, J. D. Ross, on March 4, 1939"

The Pageant of Illuminated Gardens

By the time the lecture is ended, it is dark, and then comes the masterpiece of the trip. It begins with a tour of the gorge power house, the first unit of the project. As the crowd approaches, the façade of the power house is illumined with what is said to be the purest red producible. Coming from the power house, the touring party follows a winding trail up through the famous Skagit rock gardens on up to Ladder Falls, which tumble from a glacier 5,000 feet above. The garden—the hobby of Mr. Ross—was the result of his theory that many tropical animals, birds and plants will grow hardy and thrive in the mild winters of the Cascades. Plants have been sent from many countries and have been made to live, so that the garden looks like a tropical jungle. This is now illumined, and the towering forest trees above it, by colored lights which play upon them with exquisite daintiness. A bank of maidenhair fern is suddenly cerise; green light picks out the silhouette of a dwarf maple sheltering a fairy pool; a tropical grotto is cold and azure, then suddenly warm and orange; a cedar tree becomes festoons of gold lace magically turning into wisteria. A mocking-bird begins to pour out rich cadences overhead—a real mocking-bird from the South singing its heart out up on the Canadian border—a wizardry somehow connected with 75,000 horsepower in the great generators in the power house below.

The climax is reached at the falls. Beautiful by day, they are breath-takingly superb by night as they tumble down from their source in cascades of violet, clouds of rose, sheets of royal purple, and thin out into a spray that is the end of the rainbow.

To the Second and Third Units

Everyone is up bright and early the next morning. From Newhalem the party is taken in an electric train up a still narrower canyon beside a still noisier river to the second unit, the Diablo Dam and camp and power house. The camp is on a flat, and to reach the site of the dam the entire party is lifted on an enormous elevator, 313 feet above. A six-mile lake is backed up by the dam, and a boat trip across it toward the new Ross dam has a beauty which travelers have compared to that of Switzerland.

The Ross Dam will cross the narrowest part of the canyon. It will be 640 feet high, and the lake it impounds will back up across the border into Canada.

New Fire Alarm Brings Big Insurance Savings

By L. B. Canfield
Fire Chief, Beverly Hills, Calif.

A COMPLETE up-to-date fire-alarm system manufactured by The Gamewell Co., has just been installed in Beverly Hills—and the National Board of Fire Underwriters of the Pacific has allowed a reduction of insurance rates of 16⅔ per cent on residential buildings and contents and up to 22 per cent on mercantile buildings and contents, an estimated annual saving of $18,102 in premiums.

If the actual cost to the city of $55,000 is amortized over a 20-year period, a very conservative estimate of the life of the system, allowing $1,000 per year for physical maintenance, the annual cost is $3,750. Subtracting this amount from the annual saving of $18,102 leaves a net balance of $14,352, or a profit of 373 per cent per year. This saving should grow as additional buildings go up.

Beverly Hills has an excellent water system and a well-trained fire department; and this modern fire-alarm system rounds out the protection.

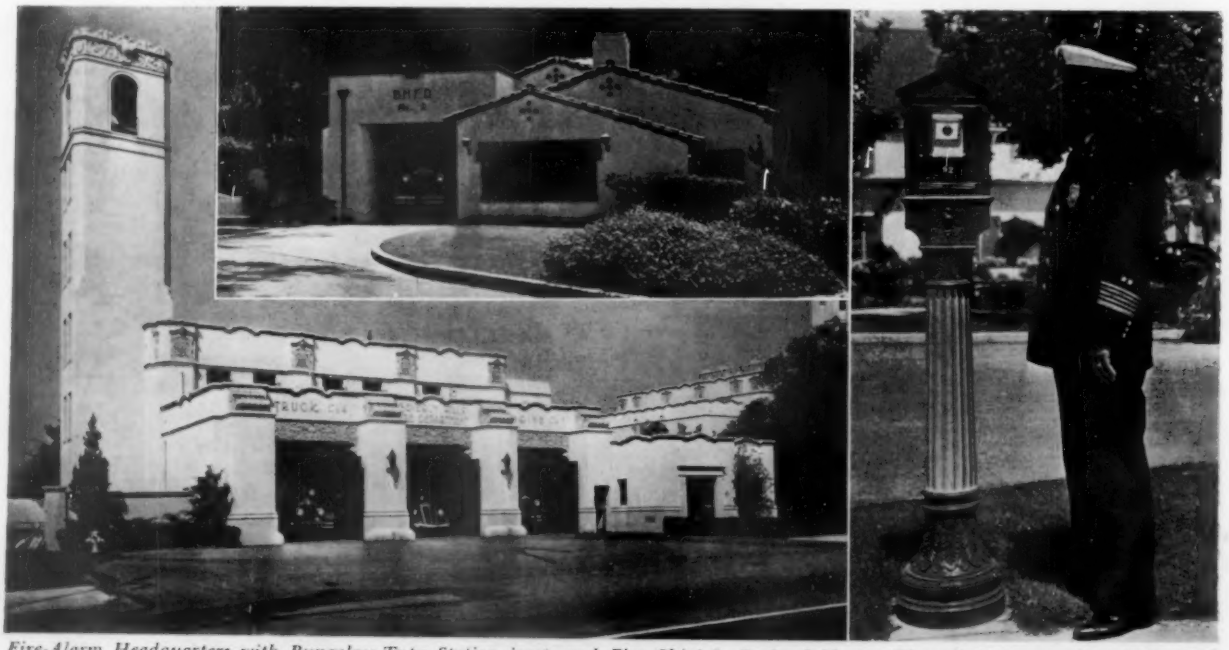
It is the latest Gamewell Three-Fold type, providing for receipt of alarms from boxes even though the circuits are broken or grounded or short-circuited, or with combinations of these troubles. The system is entirely automatic, requiring no operators.

A total of 121 boxes is included, 34 being mounted on separate ornamental pedestals, 84 on electroliers, and 3 on telephone poles. The installation of boxes on electroliers makes a very desirable arrangement where the electrolier is in the proper location, for it utilizes the existing pedestal and also provides a light over the box at night. All boxes have quick-action doors which require no breaking of glass and transmit the alarm immediately. A box can be reached by traveling not more than one block in the business district and one and one-half to two blocks in residential areas. On Wilshire Boulevard, a wide and heavily traveled thoroughfare, the boxes are located on every other block and distributed on both sides of the street. The location and number of the boxes are the foundation of the system, and great care was taken to determine the minimum number of boxes which would cover the city reasonably.

A portable hand telephone set can be plugged into any fire-alarm box and communication obtained with the central office or with any engine house or with another box. This function is very desirable when testing or when a company has responded to a fire. Portable telephone sets are carried on each fire truck and enable the Chief or other officers to maintain connection with headquarters or with each other from any box.

The system includes 5 box circuits, which with the Three-Fold feature allows 30 boxes to be connected per circuit, or a total of 150 boxes. This provides for future installation of 29 boxes with existing circuits and equipment.

The circuits leave the central office in underground cables, and the positive and negative sides of each circuit run in separate cables and



Fire-Alarm Headquarters with Bungalow-Type Station inset; and Fire Chief L. B. Canfield at a Three-Fold Box on Metal Standard

by separate routes. Each box circuit is laid out so that if damage should occur due to storm or earthquake, it can break only one side of the circuit, and alarms can be received through the Three-Fold feature from boxes on either side of the break. The underground cables include conductors for a future alarm circuit to each engine house and necessary spares. All underground cable (43.5 per cent of our 60 miles of circuits) complies with the IAME Specifications with 30 per cent Hevea rubber insulation. Vacuum type lighting arrestors and fuses are installed at the junction of aerial and underground conductors of all underground runs of 500 feet or more and for all main-line cable. The underground cables are installed in sherardized steel conduit. Hand holes are provided so that no cable extends for more than 500 feet without being accessible at a hand hole or terminal. The great precautions taken to provide service under all conditions should give us means for communicating in times of great emergency as well as routine service. Over a period of years this increased protection will pay dividends not only in reduced insurance rates but in security to the people and property in the city of Beverly Hills.

Left—Five box circuit panels, one alarm panel, and one master control panel; below—operating cabinet with manual transmitter at left, master telegraph key at right, register tape exposing signals to plain view at top center, and control switches and indicating lights directly below the tape

Chain-Store Managers Report on Parking Meters

"An Aid, but not a Panacea, for the Parking Problem"

AS THE merchants of a city represent and to quite a degree constitute the first line of objections to the installation of parking meters, this inquiry made of its local store managers by the S. S. Kresge Co. has value for nearly all municipal officials. Managers in 51 cities operating parking meters answered these questions:

What rate is charged, and how long can one park?

What is the general reaction of the public at large?

Do you agree with public opinion in this matter?

Eleven of these 51 cities charge 1 cent for 12 or 15 minutes, and of course the predominating rate is 5 cents for one hour, with two hours, and in one instance three hours, permitted at this rate in certain locations.

The general public reaction boils down to "Unfavorable at first, but now accepted without much comment." A typical report is: "Very favorable. Few if any would vote out. Generally accepted as an aid in solving the parking problem." Another: "Prior to installing meters, our city blocks were tied up with automobiles belonging to employees of various stores situated along the street."

In Pennsylvania's Capital

Of special interest are the personal opinions of the store managers themselves. Sixty-nine are favorable; and 11 are unfavorable. Typical of the former is the comment: "Personally believe parking meters the best solution for congested parking conditions in any town."

However, one manager points out the argument against meters in outlying sections of large cities when he says: "Against these meters, because adjoining cities and even other business sections of this city do not have them."

One manager who tempers his enthusiasm by quoting a local civic authority says:

"The parking meter system should not be regarded as a panacea for the parking problem. The success of the plan depends on enforcement, and the meters make it easier to enforce parking limits. This plan also has the advantage of paying the cost of enforcement. It is, in effect, a tax on the motorist, one which brings a considerable amount of revenue with very little objection. The plan has not revolutionized the parking problem, but it is working nicely, meeting with quite a little commendation from the organized business groups most closely affected, and with very little objection from the motorists."

The Kresge man in one city disagrees with local opinion said to be unfavorable. Says he:

"If we did not have these meters, those of us who work in stores and offices would no doubt park cars on the main street and, the business section being too small, this habit would eliminate customers' parking entirely."

C. E. HOLZWORTH,
Vice-President, S. S. Kresge Co.,
Detroit, Mich.

Members of NACOS

AT its twenty-fifth anniversary convention, held in Chicago, October 22-25, the National Association of Commercial Organization Secretaries paid special tribute to the 36 men who were charter members in 1914 and still hold membership in the Association. Of the 24 whose portraits are here published, 23 are still active as commercial-civic organization executives, the other (William George Bruce) being senior honorary member of NACOS.

The convention last month, with a registration of more than 400, was the largest that NACOS has held. The general theme was "Doing Today's Job More Effectively." There were papers not only on numerous problems of organization technique and of membership and finance, but also on broad questions of policy in relation to public affairs. Indicative of the growing concern of chambers of commerce with civic as well as economic problems was the statement of Oscar G. Mayer, President of the Chicago Association of Commerce, in his address of welcome, that:

"No matter what the size of a community, new economic conditions bring new problems, and Chicago, as one of the great crossroads cities of the nation, encounters that condi-

WILLIAM GEORGE BRUCE
Pres., Bruce Publishing Co., Milwaukee, Wis.
(1914: Milwaukee)

L. P. DICKIE
Mgr., SE. Div., Cham. of Com. of the U. S., Atlanta, Ga.
(1914: Tampa, Fla.)

LESTER C. BUSH
Mgr., Chamber of Commerce, Muncie, Ind.
(1914: Fond du Lac, Wis.)

RALPH H. FAXON
Sec., Chamber of Commerce, Raton, N. Mex.
(1914: Wichita, Kans.)

DANIEL N. CASEY
Sec., Chamber of Commerce, Harrisburg, Pa.
(1914: Haverhill, Mass.)

JOHN J. FITZGERALD
Sec., Chamber of Commerce, Paterson, N. J.
(1914: Sherbrooke, Que.)

RAYMOND B. GIBBS
Gen. Sec., Chamber of Commerce, Scranton, Pa.
(1914: Olean, N. Y.)

EDWIN C. HACKETT
Sec., Chamber of Commerce, Hammond, Ind.
(1914: Rochester, Minn.)

GEORGE E. COLLISSON
Mgr., Chamber of Commerce, Denver, Colo.
(1914: Denver)

GEORGE E. FOSS
Gen. Sec., Pa. State Chamber of Commerce, Harrisburg, Pa.
(1914: Springfield, Mass.)

JOHN M. GUILD
Missouri State Chamber of Commerce, Kansas City, Mo.
(1914: Dayton, Ohio)

RAWLEY W. HOLCOMBE
Mgr., Chamber of Commerce, Wheeling, W. Va.
(1914: Columbia, S. C.)

For a Quarter-Century

tion on a basis that will brook no half-way treatments. We find the need of awakening a new public consciousness of city planning, slum clearance, rezoning, and particularly of the dangers of unbridled tax levying and tax spending."

Twelve other charter members still on the NACOS rolls who have held membership for a quarter-century because of their connection with allied fields of activity, or who have retired from Chamber of Commerce work are:

J. LEE BARRETT
Exec. Vice-Pres., Convention and Tourist Bureau, Detroit, Mich.
(1914: Detroit)

HAROLD S. BUTTENHEIM
Editor, The American City, New York
(1914: the same)

MUNSON HAVENS
Hon. Mem., NACOS; Residence, Hudson, Ohio
(1914: Cleveland, Ohio)

W. E. HOLMES
Hon-Mem., NACOS; Residence, Evanston, Ill.
(1914: Sioux City, Iowa)

WILLIAM H. HOWARD
Sec., Board of Trade, Indianapolis, Ind.
(1914: the same)

JOSEPH E. KEAN
Sec., Central Mercantile Assn., New York
(1914: the same)

LACHLAN MACLEAY
Pres., Mississippi Valley Assn., St. Louis, Mo.
(1914: Oswego, N. Y.)

WILLIAM S. MILLENER
Sec., Flood Control Council, Williamsport, Pa.
(1914: Williamsport)

HUBERT F. MILLER
Chicago Mgr., Miss. Valley Assn., Chicago, Ill.
(1914: Chicago)

CHESLEY R. PERRY
Sec., Rotary International, Chicago, Ill.
(1914: the same)

HOWARD STRONG
With American City Bureau, Chicago, Ill.
(1914: Minneapolis)

LUCIUS E. WILSON
Exec. Vice-Chmn., City Mgr. Committee, Chicago, Ill.
(1914: Detroit)

E. W. MENTEL
Asst. to Pres., Chamber of Commerce, St. Louis, Mo.
(1914: Dayton, Ohio)

RICHARD B. WATROUS
Exec. Sec., Chamber of Commerce, Providence, R. I.
(1914: Washington, D. C.)

ROGER MILLER
Mgr., Southwestern Div., Cham. of Com. of the U. S., Dallas, Tex.
(1914: Morristown, Tenn.)

WALTER S. WHITTEN
Sec., Chamber of Commerce, Lincoln, Nebr.
(1914: Lincoln)

CHARLES J. KELLEM
Mgr., Assn. of Commerce, Joliet, Ill.
(1914: Kewanee, Ill.)

HUGH LYNCH
Asst. to Sec., Merchants Assn. of N. Y., New York
(1914: Perth Amboy, N. J.)

WILLIAM E. MORROW
Sec., Board of Trade, Louisville, Ky.
(1914: Louisville)

M. WARD WILLIAMS
Sec., Chamber of Commerce, Meadville, Pa.
(1914: Crawfordsville, Ind.)

G. WRAY LEMON
Exec. Sec., Camden County Chamber of Commerce, Camden, N. J.
(1914: Oil City, Pa.)

S. CHRISTY MEAD
Sec., Merchants' Assn. of N. Y., New York
(1914: the same)

ARTHUR V. SNELL
Exec. Dir., Chamber of Commerce, Chattanooga, Tenn.
(1914: Charleston, S. C.)

ROLAND B. WOODWARD
Exec. Vice-Pres., Chamber of Commerce, Rochester, N. Y.
(1914: the same)

Street Maintenance in Oak Park, Ill.

The Cost of Operating a Department of Streets in a Community of 70,000 Population

COMPARATIVE STREET MAINTENANCE COSTS: 1937-1938

Kind of Pavement	Miles of Each Kind of Pavement in Village	1937 Square Yards Repaired	1937 Total Cost	1937 Cost per Square Yard	1938 Square Yards Repaired	1938 Total Cost	1938 Cost per Square Yard
Asphaltic concrete	37.15	10,087	$3,516.45	$.349	2,671	$1,274.26	$.477
Sheet asphalt	34.56	3,716	1,936.41	.521	1,176	825.87	.702
Macadam	19.87	4,836	2,392.72	.495	2,381	1,273.13	.534
Brick	11.16	12,680	4,907.90	.387	2,765	1,478.03	.534
Concrete	5.01						
Seal coating and preliminary patching		11,122	1,901.45	.171	24,500	3,065.05	.125
Total	107.75	42,441	$14,654.93		33,493	$7,916.34	

THE total length of public streets within the corporate limits of the village of Oak Park is 107.86 miles, of which 99.9 per cent is paved. In this community of 70,000 in the metropolitan district of Chicago there are 37.15 miles of asphaltic concrete, 34.56 miles of sheet asphalt, 19.87 miles of macadam, 11.16 miles of brick, and 5.01 miles of concrete paving. A section of the brick paving 1.28 miles in length has been surfaced with a 2-inch course of bituminous concrete.

The work of the Street Department covers the maintenance of all public improvements such as street and alley pavements, sewers, sidewalks, the cleaning of street and alley pavements, installation and maintenance of traffic signals, street signs and markings, removal of household waste and garbage, care of parkways, maintenance and miscellaneous work in connection with public improvements and the use of property. The funds for the Department are classified under five heads: Vehicle Tax Fund; Street and Bridge Fund; Street Department Fund; State Highway Maintenance Fund; and Garbage Fund.

Equipment

The equipment of the Street Department includes: One Allis-Chalmers tractor with Baker bulldozer, one Austin-Western street sweeper, one 10-ton Austin-Western Road Roller, one Chevrolet box body truck, one Elgin Auto Eductor on a 5-ton Diamond T. chassis, one Ford coupé, one 1-ton Ford tractor, two 2-ton Ford tractors, two one-ton Ford dump-body trucks, one 2-ton G.M.C. truck, 16 highway trailers, three semi-trailers, twenty horses, one mowing machine, one paint spraying machine, three straight-blade street snow-plows, V-type street snow-plow, twenty steel sidewalk snow-plows, one sewer-cleaning machine, two 5-ton Sterling trucks, three 1½-ton International trucks.

Expenditures Classified

The following tables show to the best advantage the total expenditures of the Street Department of Oak Park for 1938, the distribution of the expenditures, a comparison of the expenditures for street maintenance proper in 1937 and 1938 on the various kinds of pavement, ending with a complete cost analysis of the expenditures for various operations both in total, cost per capita per year and per month, and the cost per family of four for a year and for a month.

STREET DEPARTMENT EXPENDITURES FOR 1938

Labor	$105,168.00
Rental of sweeper	500.00
Tools and equipment	672.80
Repairs to equipment	2,393.36
Pavement repair materials	3,696.31
Stone, sand, cement, etc.	730.19
Coal and fuel oil	3,038.30
Street and traffic signs	389.46
Maintenance of horses	6,162.46
Miscellaneous supplies	4,115.57
Dumping expense	2,520.00
Superintendence and office expense	7,989.33
Vehicle license, stickers and plates	1,143.71
Maintenance of sweeper	615.13
Auto maintenance and insurance	9,900.00
Energy—Stop and Go signals and Stop signs	5,659.21
Miscellaneous (accidents)	522.05
Interest fund	5,697.50
Miscellaneous overhead (inspection etc.)	9,787.98
Extinguishing fire at village dump	250.91
Contract work (curb and gutters; sidewalks)	2,135.08
	$173,067.35

EXPENDITURE DISTRIBUTION ACCORDING TO CHARACTER OF WORK

Street cleaning		$18,397.19
Alley cleaning and repairs		984.16
Street repairs		10,658.31
Sidewalk repairs		408.93
Sewer and catch-basin cleaning and repairs		5,642.55
Collection of refuse		43,766.31
Snow removal		3,845.49
Cutting weeds		2,262.15
Street signs		498.14
Traffic signs		8,804.80
Yard		1,480.26
Dump		5,032.62
Collection and disposal of garbage		41,962.06
Miscellaneous:		
Labor—St. Dept. forestry	$1,002.75	
Labor—St. Dept. misc.	10,699.74	
Supplies	358.63	
Accidents	522.05	12,583.17
Vehicle license stickers and plates		1,143.71
Auto maintenance and insurance		9,900.00
Interest fund		5,697.50
		$173,067.35

ANALYSIS OF COSTS FOR 1938 MUNICIPAL ADMINISTRATION AND MAINTENANCE

Fund	Expenditures	Cost Per Capita Year	Cost Per Capita Month	Cost Per Family of Four Year	Cost Per Family of Four Month
Building	$14,430.05	0.206	0.017	0.824	0.068
M. B. & Grds.	8,668.23	0.124	0.010	0.495	0.041
Gen. Gov.	54,879.75	0.784	0.065	3.136	0.261
Fire	138,793.51	1.982	0.165	7.931	0.661
Forestry	5,981.00	0.085	0.007	0.342	0.285
Health	18,917.36	0.270	0.023	1.081	0.090
Police	165,221.75	2.360	0.196	9.441	0.786
Garage	28,324.19	0.404	0.033	1.618	0.135
Public Works	6,944.33	0.099	0.008	0.396	0.033
Garbage	51,848.49	0.740	0.061	2.962	0.246
Streets	77,452.55	1.106	0.092	4.425	0.368
Ashes and Rubbish	43,766.31	0.625	0.052	2.501	0.208
Street Lights	55,777.66	0.796	0.066	3.186	0.265
Water	241,460.41	3.449	0.287	13.797	1.149
Playground	26,662.40	0.381	0.031	1.523	0.126
Library	57,845.79	0.826	0.068	3.305	0.275

Spheroid Water Tank Built in Brookline

Unusual Type, the First of Its Kind in Water Service, Is 90 Feet in Diameter and Holds Over 1,650,000 Gallons

ANOTHER milestone in elevated water storage has been passed with the completion and public inspection on October 3, 1939, of the new 1.6-mg steel storage tank at Brookline, Mass. With a needed capacity of one million gallons and an allowable variation of head of about 30 feet, the spheroid type of tank was chosen. This type, one used for many years in the gas and oil industries for high internal pressures, permits the storage of 1 mg in the top 25 feet of the tank.

Early in 1938 the Water Board realized that the old high-service standpipe on Single Tree Hill in Brookline had to be replaced. This cylindrical standpipe was originally designed to be of service for about 25 years, but has actually been in use for about 54 years.

Design of Tank

Based on designs of Fay, Spofford & Thorndike, consulting engineers, Boston, Mass., for the spheroid type tank, the construction of the tank was awarded to Chicago Bridge & Iron Co., on its low bid of $37,850. This tank is similar to the standard smooth-type Hortonspheroid which this company has been building for eleven years for the storage of natural gasoline and volatile liquids. It is 90 feet in diameter and 47 feet high. The structure is slightly different, however, the bottom being flat instead of curved as it is when these structures are built for withstanding a higher internal pressure.

The original design is based on building a structure in the shape which a flexible container such as a rubber bag would take if it were filled with a liquid and also contained a gas under pressure, and was laid on a flat surface such as a table. This shape subjects all the metal, even in the roof and bottom, to tension. In an ordinary cylindrical tank only the shell plates are used to withstand bursting force. The spheroid design introduces additional economy, inasmuch as very little metal is used to retain the form or shape of the structure, since it is built in the natural shape which it would take if it had no stiffening or supporting metal whatsoever. In the average cylindrical tank a considerable amount of the metal is used for the sole purpose of retaining the form or shape of the tank.

At Brookline, it was not necessary to have the structure withstand a high internal pressure. The spheroidal design was adapted primarily to provide a large amount of storage within a relatively low range in head and to produce a structure pleasing in appearance. The low range in head was necessary because of an ordinance which restricted the maximum height of any structure which could be erected on Single Tree Hill. The appearance factor was governed by the fact that the site is in a high-class residential district.

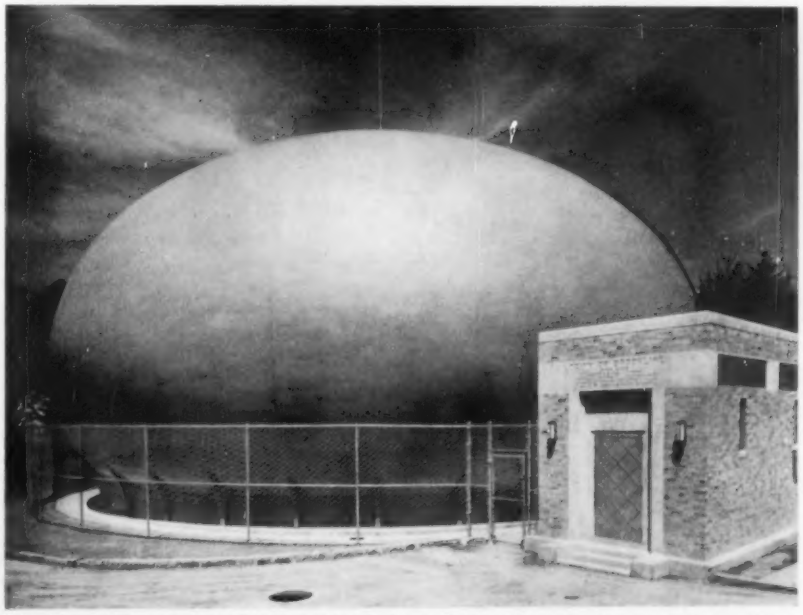
The plates in the bottom of the tank are 3/8-inch thick, those between the bottom and the equator are 5/16-inch, and those above the equator are 1/4-inch in thickness.

Foundations

The foundation for the tank is a ring-shaped reinforced concrete footing extending a little over one foot above the finished grade at the site. This gives a general impression that the tank is resting on the ground, but such is not the case. The foundations for the tank and the adjacent gage and storage house were built by Grande & Volpe, Inc., contractors at Malden, Mass., under a separate contract for their low bid of $20,000.

Fabrication

The plates used in the Brookline spheroidal tank were prepared at the Greenville, Pa., plant of the Chicago Bridge & Iron Co., by pickling before shipment to Brookline. This phosphoric pickling process was developed recently to remove



The New 1.65-mg Spheroidal Water Tank Recently Placed in Service at Brookline, Mass.

all mill scale from plates, the pickling being done after the plates have been fabricated. All the plates for the Brookline structure, which is a completely electrically welded tank, were dished and the edges prepared for welding before the pickling operation. The plates were first dipped in a vat containing a warm sulphuric acid solution and left there a predetermined period until all the mill scale had been removed. They were then lifted from the bath and dipped into another vat containing warm wash water, to remove the sulphuric acid which remained on the plates.

After being washed twice, the plates were dipped into a warm phosphoric acid bath to which a small amount of iron had been added. This bath removed any remaining traces of sulphuric acid and left a thin coating of iron on the surface of the steel, which acts as a rust inhibitor and improves the bond between the metal and the paint, which is applied immediately.

Upon being removed from the final bath, the plates were placed in specially arranged racks, and a coat of special paint was applied while the plates were still warm. The residual heat in the plates hastened the drying of the paint. By painting the plates immediately after they came from the pickling process, there was no chance for film or dirt to collect on the surface. The use of the phosphoric pickling process enables steel to be painted as soon as it is erected. If the mill scale is not removed by pickling or sand blasting, it is necessary for the structure to stand for several months until the mill scale rusts off before the paint can be applied. In addition to allowing prompt painting, the pickling reduces maintenance, since the first coat of special paint forms a good bond with the metal and lasts longer than the ordinary coat of field paint. In this way maintenance costs are reduced.

The Water Board of Brookline set up very rigid qualifications for all welders working on this job. Local help was employed as far as possible, but out of some 165 applicants as welders for this structure only nine were considered satisfactory to the Water Board and were accepted. All the welding was done with Lincoln Stable Arc portable welders, the total output of which was sufficient to supply all the needs of the town of Brookline for electric service.

Landscaping

To insure an attractive structure, the grounds have been carefully landscaped with over 200 evergreen trees selected by Olmsted Brothers, landscape architects, of Brookline, for their special properties of color and shape. These have been planted about the structure, which has been painted a dull neutral gray to prevent reflection.

The design of this tank seems to overcome about all the ills and hazards to which steel tanks seem to be heir. New Englanders recalling the September 21, 1938, hurricane will be glad to know that the shape of the tank makes it about as streamlined as any structure could be from every direction. Because it squats so close to the ground, it offers little hazard to airplanes, and adventurous youth is prevented from climbing it because of its very shape and smoothness. All connections are at the center of the tank within a tunnel, making it tamper-proof, and there are no flat surfaces anywhere on the tank on which rain or snow may collect and pool.

The Water Board of Brookline is composed of Timothy J. Burke, Chairman, Francis W. Hamilton and William D. Paine. Preliminary studies on the new tank were made by Walter B. Bushway, Superintendent of Works. Fay, Spofford & Thorndike of Boston were the consulting engineers on the design of the tank, which was built by Chicago Bridge & Iron Co.

"Guard Your Parking Areas and Guard Them Well"

INCREASE in value in retail business property is going to come in our smaller cities and our suburban shopping areas, Parker Webb, Boston, nationally known authority on the leasing of business property, predicted, addressing the National Association of Real Estate Boards at its annual convention in Los Angeles on October 25. The reason, he said, is the fact that people generally, while they are going to continue to trade in the great stores in the hearts of our large cities, will nevertheless make an increasing proportion of their purchases in the suburban areas, where they can conveniently use their automobiles.

To those suburban shopping centers and those small cities that have found their retail business steadily increasing, Mr. Webb gave this one word of warning: "Guard your parking areas, and guard them well." If retail trade in such a community increases so rapidly that there comes temptation to decrease the parking area in order to build more stores, the community will soon find itself in a dangerous predicament, he said. Some of the business which it has been enjoying will move along to other suburban areas where parking space has not become so limited.

"Most large cities have done little or nothing to take care of this change in the buying habits of the general public," Mr. Webb pointed out. "Suburban towns and shopping centers have grown by leaps and bounds, and the people of these areas now find at their very doors or within easy access by automobile excellent markets, theaters, and shops. But the great outstanding factor that has brought business to these suburban areas and kept it there has been the fact that these cities and towns have been careful to include in their development large areas of free parking space; and storekeepers, realizing this great asset, have broadcast far and wide that they have parking spaces, adjacent to excellent retail establishments, well equipped to take care of all demands that may be made."

A great proportion of the shopping of the future will be done with the automobile, Mr. Webb warned. The purchasing public has gradually become accustomed to going on a shopping expedition with the car, driving to a trading center, doing a large portion of the week's shopping at one time, filling up the car with bundles and purchases, and driving comfortably home. He pointed out the importance, in conserving values in downtown districts of large cities, of finding a workable solution to the parking problem there, inattention to which in the last ten or fifteen years has unnecessarily hastened urban decentralization.

Richmond Uses Cold-Mix to Repave Stone Block Street

Program of Capital City of Virginia Carried Through Winter When Weather Conditions Permitted

A LARGE resurfacing program was started in Richmond, Va., in the fall of 1938 and was extended throughout the winter and then, when further Federal relief funds became available, new projects were started so that the work continued well into the summer. The first contract was awarded to J. R. Ford Co., Inc., of Lynchburg, Va., for the resurfacing of about 51,000 square yards of old granite block pavement with cold-mix and laying about 6,000 square yards of 2½-inch sheet asphalt on a concrete base. The work was continued from early November through until February, during which time the temperatures ranged all the way from 18 to 65 degrees F. Low temperatures and intermittent rains caused shut-downs.

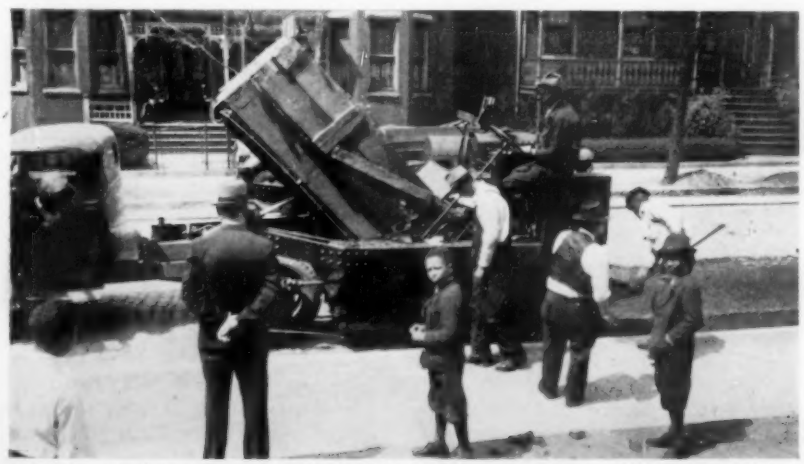
A 10-Ton Galion Tandem Roller Following Closely Behind the Spreading of the Sheet Asphalt. Note the Man at the Left with the Sprayer for the Rolls

The Cold-Mix Work

The old granite block pavements which were being resurfaced were thoroughly cleaned with a Case four-wheel tractor driving a Detroit Harvester rotary broom mounted in front. A leveling course was spread 1⅝ inches thick on the clean pavement, followed by a binder course 1 inch thick, and a ⅜-inch top course. The leveling and binder courses consisted of ¾-inch aggregate and smaller, with 4.25 per cent of asphalt. The top course was mixed with ⅜-inch screened material and smaller, with 5.6 per cent of the same Trinidad Lake asphalt blend.

Two Adnun Black Top Pavers 10 and 12 feet wide were used on the wide streets, followed by a 10- and an 8-ton Galion tandem roller. Only two rakers were required behind the bituminous paver, and one set-up man with a hot tamper at the gutter line. Careful raking and rolling at the longitudinal joints between the strips eliminated hard and fat joints. The wide rolls of the Adnun Black Top Pavers and the rolls of the power rollers were sprayed intermittently with a fine mist of fuel oil from a hand pressure tank.

The liquefier type of cold-mix, as well as the sheet asphalt, was purchased by the contractor from the Natural Asphalt Corporation of Va., in Richmond. The temperature of the cold-mix as delivered was about 110 degrees, and the hauling was done with Ford and Chevrolet trucks using dual pneumatic tires, with an average of five 5-ton trucks working at any one time. The hauling was all done by the producer, since the contractor bought the mix delivered to the paver.



An Adnun Black Top Paver Spreading Sheet Asphalt on an Old Stone-Block Pavement at the Side Against a New 7-Foot Granite Curb

Sheet Asphalt

The sheet asphalt was laid on 8-inch concrete base in two courses consisting of a 1-inch binder of ¾-inch stone and smaller with a 5 per

cent Trinidad Lake asphalt and a 1½-inch sand top with 10 per cent of the same asphalt. For the sheet asphalt the haul was about two miles, and the mix was delivered to the spreader at an average temperature of 325 degrees F. The sheet asphalt was rolled with a 3-wheel 10-ton Galion roller for breakdown, and an 8-ton Galion tandem was used for the cross rolling.

On the latest projects, 7-foot concrete gutters were poured ahead of paving the remaining 26-foot granite block strips. On this work only one raker was used against the gutter, taking out the slight excess of material spread against the concrete.

These contracts were operated eight hours a day with the production running up to about 300 tons. This is not a large quantity, but the need of jumping from one section to another, and also the varied temperature of the air, kept down the volume of the work. The work was done for the city of Richmond under the direction of Gamble Bowers, Director of Public Works, and A. M. Harris, Chief, Streets Bureau. Sam Campbell was Superintendent for the contractor, J. R. Ford Co., Inc., Lynchburg, Va.

"Housing in Our Time"—New Sound Film

"HOUSING in Our Time" is the first moving picture that has been made on the subject of public housing. After seeing the movie at the White House, President Roosevelt said of it:

"With half the world torn by the forces of destruction, 'Housing in Our Time' sounds a call and shows a way to construction. It is a call that wisdom in the United States will heed.

"The strength and stability of American democracy lie in a self-respecting citizenry. The USHA film reveals the extent to which their living conditions makes self-respect so difficult for millions of our people. But it also demonstrates that the slum can be removed; that decent, low-rent housing can be provided; that men, money and materials can be put to work for the benefit of all."

Public Housing, the new weekly bulletin issued by the United States Housing Authority, describes the new film:

"In 'Housing in Our Time,' a 20-minute sound film, the United States Housing Authority brings to the screen both the harsh reality of the slum and the proof that it can be removed. The film is a true story with a happy ending.

"'Housing in Our Time" is a strictly documentary film, which means that it deals with nothing but facts. The ruthless eye of the camera roves over the land to dispel the comforting myth that the slum exists only in the big city. It explores the repulsive shacks of the small town as well as the dark alleys under the shadow of the Nation's Capitol. It finds in rural shelters no less misery than in the tenements of New York or in the miners' huts of Pittsburgh.

"However, it is through its recording of the grim details of the every-day life of a low-income family in Jacksonville, Fla., that the film makes real the nature of the struggle that millions of Americans must carry on to maintain self-respect and create a home in slum dwellings. These scenes give the picture distinction and demonstrate the irresistible necessity for public housing.

"The second half of the film tells in pictures and words that all can understand how a local housing authority functions in cooperation with the USHA. The film follows a project from the granting of a loan by the USHA, through demolition and construction, to occupancy. It analyzes the benefits of public housing to labor, to industry, and to the taxpayer.

"Few Americans understand public housing—why it is, what it is, and how it works. This lack of public understanding is the most serious obstacle in the path of local housing authorities. 'Housing in Our Time' should help them to clear away that obstacle. The film is suitable for showing to every type of audience.

"The Informational Service Division of the USHA, under whose direction the film was made by Courier Productions, Inc., of New York, plans to have 16-millimeter prints made available for purchase by local authorities and any others who want them. The cost of a 16-millimeter print, including reel and fiber case, will be about $17."

English Housing and the War

THE havoc that war plays with normal civic and construction activities and with landlord-tenant relationships is all too plain in England. Stoppage both of new house building and of slum demolition, and adoption of drastic rent controls for existing dwellings, were decreed almost simultaneously with the declaration of war. In its War Series No. 1, issued in September, 1939, The Housing Center of London reports:

"Local authorities have been advised that, except in special cases, the further demolition of houses under slum-clearance schemes should be postponed for the time being. No further action is to be taken with regard to houses already condemned, and building schemes are to be abandoned unless the accommodation is nearing completion. In some cases the Minister of Health would be prepared to consider applications for schemes of national importance, and the case of houses required for workers in new factories or for agricultural laborers is an example."

Explaining the features of the new "Rent and Mortgage Interest Restrictions Act," the Housing Center bulletin says:

"This is a vitally important measure extending control of rents and mortgages to the great bulk of houses in this country. In order to prevent hardship, tenants of *all houses* of a rateable value of £100 or less in the Metropolitan Police District and £75 or less in the remainder of England and Wales are controlled for a period extending to six months after the end of the present emergency. This control applies to houses whether they were previously decontrolled or not. The effect of this Act is to prevent landlords raising the rents of houses above the figure payable on September 2, 1939, except in the case of permitted rises on account of structural alterations, or where the landlord pays rates [taxes] and the latter are raised by the local authority."

Traffic Conditions Improved in Elmira, by Replacing Two-Lane Truss Bridge with

Four-Lane Bridge of Steel Girders

By C. H. GRONQUIST
Robinson & Steinman,
Consulting Engineers,
New York City

THE present two-lane truss bridge over the Chemung River at Madison Avenue in Elmira, N. Y., has been replaced by a modern four-lane continuous steel girder bridge. Originally planned with provision for market stalls to make it a self-liquidating project, the bridge was finally financed by a PWA loan and grant to the city. Though intended initially to replace the bridge at nearby Lake Street in Elmira, the same design has been used at the Madison Avenue location with slight modification of the foundations.

Construction of the foundations was delayed at the outset by the death by drowning of both members of the contracting firm, when a temporary timber construction trestle, which they were attempting to protect with the aid of several workmen, was swept out by ice and high water. This occurred during the middle of February, 1939, and work was not resumed by the subcontractor to the surety company, which had bonded the original contractors, until the first of April, three months after the start of the job. No other delays or loss of life occurred, and the foundations were completed early in June.

Bridge Structure

The roadway of the new bridge is of the concrete filled steel grating type, 42 feet in width, and is flanked by two 8-foot concrete sidewalks. The new structure is located immediately upstream of the present bridge in such manner that the downstream railing of the former and the upstream railing line of the latter coincide. Construction of the new bridge alongside the present one simplified construction problems, permitted the maintenance of traffic during construction, and will greatly improve the alignment of the approaches.

The bridge is made up of seven spans varying in length from 38 to 112 feet, to give a total length of 552 feet between end bearings. There are three lines of girders, one at the center of the roadway, and one at each curb. The sidewalks are supported on brackets cantilevered from the curb girders.

There are many advantages of the continuous girder construction which was adopted for this bridge. Owing to the continuity of the girders, there are only two expansion joints in the roadway, one at each of the girder expansion hinges which are located 107 feet from each abutment. Continuous girder construction also makes for economy by permitting the use of girders of lesser weight than for the usual simple span construction. This type of construction allows the bottom flanges of the girders to be curved to a constant radius to enhance the appearance of the structure, and at the same time to provide greater depth at the piers where the stress-producing moments in continuous girders are greatest. The maximum depth of the girders of the Madison Avenue bridge occurs over the center piers and is 11 feet 5 inches. The spans are set on fixed bearings at one of the center piers and at the abutments; at the remaining piers they are supported on rocker bearings which permit the movement of the continuous girders produced by their temperature expansion and contraction.

Foundations

The foundations for the Madison Avenue bridge consist of six piers and two abutments, all of reinforced concrete. All the piers are 4 feet wide at the top and increase in width throughout their full height at a constant batter. The pier footings were placed inside steel sheet pile cofferdams which were driven into the gravel and clay river bed and pumped dry during excavation and concreting. The abutments are of the counterfort type. Their footings, like those of the piers nearest shore, were placed inside earth dams. This was possible because of the shallow

2- or 3-foot depth of the river at times of low water, which can increase to 19 or 20 feet during times of flood.

Construction of the steel superstructure was commenced about the middle of June. Erection of the girders was done by means of a traveling derrick which ran out on the steel and placed sections of sufficient length to extend as cantilevers beyond each pier. By this means erection could be carried on entirely from one end of the bridge, and without the use of falsework.

All steel work was completed early in September, and the placing of concrete for the floor and sidewalks was immediately commenced. Work on the straightening of the north river walls and of the walls for the approaches was also begun at that time. Dismantling of the old bridge was started October 1. It is expected that the new bridge will be opened to traffic during November.

The contract for the construction of the foundations and the removal of the present bridge was let to Holleran Brothers, of Elmira, with the U. S. Fidelity and Guaranty Co., of Baltimore, Md., as surety. Carl R. Camp, of Philadelphia, as the surety's subcontractor, completed the foundation work. The contract for the construction of the superstructure was let to the American Bridge Co., a subsidiary of the U. S. Steel Corporation, with a plant at Elmira. John H. Bolton, of Watkin's Glen, was awarded the contract for the river walls and approaches. The total estimated cost of the project, which was contracted on a unit-price rather than lump-sum basis, is $210,000.

Robinson & Steinman, of New York City, and Haskell & Considine, of Elmira, are associated on the design and supervision of construction of the bridge as engineers and architects respectively. The Regional Director of the PWA is Col. M. E. Gilmore, of New York City.

A Legal Aspect of Trees in Streets

By ARTHUR L. H. STREET

Is a motorist liable in damages to a municipality for negligently injuring or destroying a tree standing within the limits of a street, highway or other thoroughfare?

To pin ourselves down closely to this question, we exclude consideration of cases where the tree constituted an obstruction to travel, and assume that the motorist was clearly and exclusively at fault.

The appellate court reports are so nearly devoid of cases on this subject as to preclude the statement of any general rule.

That a city or other municipality has as much right to sue for damages done to its property as has any private owner of property seems to be well settled. But the troublesome question is whether or not a municipality *owns* trees that stand in streets, etc. And that question involves subsidiary considerations depending on who planted the tree and who owns the soil on which it grew.

In the case of *City of Salem v. Salem Gaslight Co.*, 241 Mass. 438, 135 N. E. 57, decided by the Massachusetts Supreme Judicial Court in 1922, the city sued for and recovered damages to trees that stood within the limits of a highway—between the sidewalk and the paved portion of the highway. The damage was caused by the gas company negligently permitting gas to escape from its pipes, but, under fundamental legal principles, the company's liability would seem to have been the same had one of its trucks negligently crashed into the trees. However, the city appears to have doubted its right to recover under a theory of its control over the highway, for it rested its right to recover on the ground that it owned the land on which that part of the street abutted. The land was used for public library purposes, and the decision awarding damages to the city recognized the right to recover as resting upon the city's status as an abutter.

In *Murtaugh v. Chicago Motor Coach Co.*, 269 Ill. App. 290, decided by the Illinois Appellate Court in 1933, an abutter was awarded $200 damages for injury to a Lombardy poplar, caused by defendant's bus being negligently driven over a curb and onto a parkway in front of plaintiff's premises. Defendant stressed the fact that the city owned the fee simple title to the soil of the street, and not a mere easement for street purposes, thereby intimating that if any one could recover for the damage it was the city. But the Court ruled that plaintiff, as an abutter, had such easement in the street as to sustain her damage claim. The Court approvingly quoted a declaration of the Oklahoma Supreme Court (*Norman Milling & Grain Co. v. Bethurem*, 41 Okla. 735) to the effect that, even where the city owns the soil of a street and is the *general* owner of trees standing within the street limits, the abutting owner nevertheless has a *special* ownership that will sustain his right to damages for injury to that ownership.

The logic of the two cases last cited justifies a view that where the city owns the soil on which the tree stands, it can recover such damages as it sustains and that the abutter can recover such damages as he sustains. (It may be difficult to segregate the damages as between city and abutter, but that is a matter outside the pale of this article.)

Where, as is usually the case, the city does not own the fee of the soil of a street but merely an easement for the purposes of public travel, etc., the force of a claim by the city is naturally diminished. And where the city did not plant the tree, the claim becomes still weaker.

In the case of *State of New Jersey v. Vineland*, 56 N. J. Law 474, 28 Atl. 1039, 23 L. R. A. 685, decided by the New Jersey Supreme Court in 1894, that Court said: "A thrifty tree in a public highway, the fee of the soil of which is in the abutting landowner, belongs to the abutting landowner (*unless it has been planted by the public authorities*); and he may have trespass"—an action for damages—"against any person who cuts down any such trees growing on the side of the road, and left there for shade or ornament." Thus we have an intimation—not a decision, because the point was not presented for decision—that, even where the abutter owns the soil of a street, the municipality has some sort of ownership in trees that it planted.

Under the decisions above cited, and other similar ones that might have been cited, there is plausible ground for these views:

Where the city does not own the fee of the soil of the street and did not plant the injured tree, its right to sue for the injury is very doubtful.

Where the city owns the fee of the soil but did not plant the tree, and the tree has been regarded as something for the beautification of the abutting property rather than a public improvement, the city's right to sue is still doubtful, but more hopeful because the tree is a part of what the city owns in fee.

Where the city does not own the fee of the soil, but planted the tree as part of a public improvement, it has a right to redress to the extent of its loss, the same as if the motorist had negligently run into the city's fire-truck or an ornamental fountain erected by the city on a parkway along the street.

Where the city owns the fee and planted the tree for the beautification of the street, it is the general owner, if not the sole owner, of the tree and therefore entitled to recover damages for the injury done, the same as it has a right to recover damages for any wrongful injury to any other species of property owned by it.

Evasion of Realty Taxes - A Drag on Prosperity

By J. Rupert Mason

LAND is the one taxable resource which cannot be hidden nor moved away, and therefore it is usually assumed that real estate tax evasion and avoidance are next to impossible. And taxes on realty now represent the sole important source of taxable revenue reserved exclusively to state and local governments.

However, the experience of recent years is making it very clear that we have given far less thought and study than we ought to the importance of promptly collecting taxes that have been levied on real estate. Also that penalties, periods of redemption, and the laws governing the foreclosure or sale of delinquent property vary greatly from state to state. In California, for example, the Legislature has enacted and re-enacted tax-sale moratoriums regularly since 1933, now extended to 1940, during all of which time the state has been unable to compel the payment of taxes, no matter how long overdue, from any landholder.

Tax "Smuggling" and Publicity

Obviously, such long delay in the collection of these taxes forces every taxpaying landholder to be taxed at a higher rate, and much as we may be loath to see good land lost for nonpayment of taxes, surely the tax *payers* are entitled to the first consideration, in a democracy. When George Burns was suspected of having bought for his wife, Gracie Allen, a "smuggled" bauble, without having paid a duty on it, the papers gave the story front-page headlines. Burns was promptly convicted, and fined heavily for having tried to evade this "tax." But, had he undertaken to make his wife a present of California real estate on which no taxes had been paid for many years, such tax "smuggling" would get no publicity, and chances are Burns would be applauded as a shrewd realty operator!

Why is it, that we disapprove attempts to evade income, inheritance and all other taxes and import duties, yet view with little concern the wholesale evasion of taxes lawfully levied against real estate?

All too many of us appear to have forgotten that land is the source of all our wealth, and that no matter how complex our industrial system may appear, it is still true that all wealth is the product of labor, applied directly or indirectly in transforming the natural resources (in and on land) into the things man desires. Hence, the consequences of permitting much land to long remain in the hands of those who fail, refuse or neglect to pay the taxes lawfully due the state or local government, definitely lessens the wealth society might be creating in and from that land, and in addition to the unfairness to tax *payers*, the failure to keep the title to our lands circulating normally and democratically only hardens the problem of unemployment and housing.

Why Not Enforce the Rules?

It is possible, by orderly and impartially administered state tax-collection laws, to regulate the tenure of land in private ownership, and to do it just as democratically as we regulate the tenure of a bat in a baseball game. But let a ball player keep the bat, after he has had three strikes, and there are eight "unemployed" players getting cold on the players' bench. To have a baseball game, the players must first clearly understand the principal rules. Then, there must be an umpire who is unafraid to call even a Babe Ruth "out" after three strikes. Let a ball player who has had three strikes try to keep the bat, and you no longer have a ball game, but a riot.

The slump has left many millions of parcels of real estate on the doorstep of the states and local governments for unpaid taxes. But, all too often, they merely remain there, and now constitute a veritable "no-man's land." In Florida, it is said the state and local governments have collected no taxes at all from over half the land in that state, in over ten years.

In nearly every state, county and city there are today far too many tracts of real estate still standing in the name of closed banks and mortgage institutions, bankrupt individuals, and those who can pay these taxes but have not thought it necessary to do so until entirely convenient. Included in this tax-defaulted land are millions of acres of worn-out and infertile land, much of which is still under the plow, getting bonus payments of one kind or another from the Department of Agriculture, even though the taxes due on it have not been paid for many years. Surely it would seem, in such cases, the least the Congress ought to insist upon, that any such subsidies be first applied to the payment of land taxes.

Regressive Taxation Burden

Because we have not come to grips with this important social and fiscal problem, state after state has been forced to enact regressive sales and other business-hampering taxes, which lessen the people's purchasing power, and definitely lessen incentive to embark in any new industrial enterprise.

Whereas, a few years ago, schoolhouses, local roads, etc., were paid for from taxes levied against property holders in the local government, now the trend is to shift those taxes to the state. The states, in turn, have succeeded in shifting a large per cent of taxes they formerly collected, onto the Federal Government, until industry at last, and justly, complains. Unless this trend is reversed, we cannot hope to avoid still more onerous taxes on, and regulations of, industry and every field of private business. That is the price we must be prepared to pay, if we longer tolerate so much land to remain unemployed, and not paying its fair share of the cost of government.

No White Feathers for Civil Servants

Calling Attention to the Fact that the schedule of "reserved occupations" now in force in England exempts from military service the whole of the executive and clerical grades of local authorities' staffs over the age of 25, *Local Government Service*, of London, says in its October issue:

"One benefit of the reserved list should be the absence in this war of that monstrosity of the first years of the last, the patriotic female who marched through the streets distributing white feathers to every man out of uniform. Mention of her recalls the story of the Oxford don approached by one of these Amazons and asked, in her most aggressive tone: 'Why are you not at the front, fighting to defend civilization?' 'Because madam,' he retorted blandly, 'I represent that civilization the soldiers are fighting to defend.' That is a reply the local government officer may well fit to himself. For, apart from his specific war task of civil defence—no less vital and, probably, no less dangerous, than that of the man in the trenches—he does represent to a large degree that ordered civilization of social progress and liberty the nation is now defending against dictatorial tyranny."

Whither the City?*

By Lewis Mumford

In the end, who loves his city best?—He who seeks to improve it, or he who is content to muddle along in the familiar grooves, exercising a minimum of foresight, intelligence, and imagination? History allows no doubt as to the answer: that which makes a city dear to later generations is the power to master its own destiny and express its best ideals in the transformation of its environment.

WHEN one points out the defects in the development of a city, its citizens sometimes exhibit resentment: they have adjusted themselves to these defects, they are often unconscious of them, and at times they even incline to class them with benefits. The inertia of habit, the indifference of repetition, underlie the citizen's apparent sense of pride. People sometimes look more benignly on familiar evils than they are inclined to look upon unfamiliar goods. . . .

When funds are lacking to provide safe traffic intersections, necessary street lightings, or new schools, most citizens do not connect this shortage with money that has been unwisely spent elsewhere, on servicing subdivisions that cannot in reality pay their way. Unfortunately, many city officials, financiers, and real-estate subdividers are equally ignorant—and equally indifferent as to the economic and social results of a reckless policy of expansion. . . .

Overblown Attempts at Civic Greatness

As a result of this over-expansion, cities throughout America have been decaying in their old centers, and over-extending themselves in raggedy fragments, often tax-delinquent or otherwise approaching private and public industry at the edges. Today these overblown attempts at civic greatness have become the signals of municipal bankruptcy. Planning for indefinite expansion is now wasteful and obsolete. The city of the future will have a better sense of its natural limits: it will attempt to make the most of what it has, rather than to evade its actual difficulties and its actual deterioration by encouraging its population to move out to the outskirts and permit the interiors to become more completely blighted. Good planning means rehabilitation: it means beginning over again and doing the job right.

With the approaching stability of population comes another possibility that has usually been foreign to our American city economy: the notion of permanence, particularly permanence in location and in the type of use to which a district or a zone is dedicated. Hitherto the exploitation of land has been on the assumption that the population would automatically increase: this increase in population would cause a rise in land values: the rise in land values in turn would cause a more intensive type of exploitation and would thus promote a change in use from residential to commercial, from low buildings to high buildings. From the standpoint of the landowner or the real-estate speculator, this transformation was the main purpose of city development: no effort that promoted it was unworthy. Hence the popular programs for "attracting population."

Under such a system effective zoning was impossible, and effective planning, in which the street pattern could be adapted to the particular function served, was hopeless. Every street was planned to serve eventually as a through traffic artery; and blocks were laid out and land subdivided so as to produce the maximum number of salable lots and street frontages, not so as to make the most economic and socially advantageous use of the site. With the diminishing pressure of population, there is a reasonable prospect of planning for permanent functions and permanent uses: not for the next few years alone, but at least for the next few generations. Planning that is done now will set the mold of the future. Hence it is important, both in the general scheme of planning and in each individual task, to take all the necessary time and forethought and technical skill and art that are necessary to effect a good plan. . . .

The One Real Field of Expansion

Still another conclusion follows from the approaching stability of population. During a period of expansion it was natural that industry should have the primary task of feeding the hungry mouths, clothing the naked bodies, linking together by railroad and steamship the newly settled areas. Hence new productive enterprises absorbed most of the available capital. By now, however, a great series of major industries have been built up and a vast productive plant is in existence. Although opportunities for new enterprises and new types of industrial goods will doubtless multiply, it should be plain that for the major industries the plants themselves will be on a replacement basis, and in the case of many commodities, the commodity itself will be on the same footing. Only one real field of expansion remains: that of raising the standard of living, of multiplying per person the amount of goods consumed. Whereas the emphasis in the nineteenth century was mainly on the fascinating new problems of production and transportation, the emphasis for the twentieth century must be on the no less urgent problems of distribution and consumption.

*Excerpts from "Whither Honolulu?—A Memorandum Report on Park and City Planning," prepared by Lewis Mumford for the City and County of Honolulu Park Board.

During the last generation, however, there has been a steady shift from individual demands, satisfied mainly by machine industry as an incident in the creation of profits and dividends, to collective demands, expressed in goods and services that are supplied by the community to all its citizens.

Education, recreation, hospital services, public hygiene, have increased in importance in the national economy: they represent a collective need whose fulfillment the community cannot leave to the working-out of the laws of supply and demand on the part of sporadic individuals. . . .

A Priority Schedule for Municipal Spending

This new field for expanded effort is a very large one. Few cities can boast that they have the accommodations they need for parks, playgrounds, schools, and museums on the scale that would be necessary if anything like a full quota of the population had the means to take advantage of them. In comparison with the abundant energies of our civilization, to say nothing of its superb technical equipment, the majority of our cities are in a state of pitiful impoverishment, filled with obsolete structures and makeshift urban services. The ugliness and sordid disarray of the usual American city, the existence of slums, the absence of a consistent and harmonious design in so much as a single quarter of the city, the failure to achieve a coherent pattern—all these things are a contradiction to the high pretensions of our civilization.

If the existing city is not to go downhill in population, it must make itself over into the sort of environment in which having children will not be a burdensome liability. This calls for the systematic improvement of housing, the prevention of overcrowding, the establishment of healthy standards of density, the creation of necessary public open spaces. Such measures should be framed and applied to all undeveloped areas at once, to keep them from turning into slums and blighted districts: it calls likewise for their early application to older parts of the city, and in particular to those ripe for demolition as pestilential slums. Finally, it calls for the provision of gardens, parks, and recreation grounds on a scale that will give to the city all the advantages that the suburb usually has at the beginning of its existence—before the suburb itself becomes a prey to speculative disorder and congestion.

Ultimately, every well-administered municipality, in order to save itself from bankruptcy and hopeless arrears, must offset the tendency toward reckless suburban growth by taking substantial measures toward its own renovation. Not merely must the municipality discourage such uneconomic growth by resisting premature subdivision, by withholding assent from ill-advised express highways, bridges, or tunnels that open up cheap land outside the municipality's area of control: what is much more important is that it will seek to make the city itself permanently attractive as a human home by slum clearance, large-scale housing, neighborhood planning, and park development. *On any priority schedule for cities, these things come first: and other municipal improvements are acceptable only to the extent that they directly further the movement toward urban rehabilitation. . . .*

Greenbelts and Parkways

One of the great principles established by modern urban design is the necessity for greenbelts to give shape and coherence to the local community and to keep it from being invaded, once its character is established, by a lower order of urban building. The failure to establish a greenbelt around the garden suburb of Forest Hills, L. I., for example, turned out to be a miserable "economy." What it did was to invite the speculative builder to creep up to the very door of the community and fatten himself on the values created by good planning, whilst lowering the values of the neighboring property. The greenbelt serves a triple purpose, then: it gives a coherent pattern to the neighborhood; it prevents encroachment; it provides needed park space. Moreover, the provision of intra-urban parks in long strips has the excellent effect of spreading park services over a wider area; while, at the same time, it avoids the vice of parks like Central Park in New York, of taking too large a chunk out of the urban building area and more or less blocking its articulated development. . . .

Here is an important difference between the two types of traffic arterial: The arterial road is a wide thoroughfare, almost impossible for the pedestrian to cross and extremely disagreeable to travel on because of the glare and the usual ugliness of the straggling business or residential developments on each side. A parkway, on the other hand, that has a right-of-way at least one hundred feet wide, can be planted so as to offer complete shade and coolness for those who drive along it, as well as a maximum degree of safety for those who wish to cross it. A road is a public thoroughfare to which all abutting property owners have right of access: a parkway, in distinction, is primarily a park, and the road that runs through it need not be opened to traffic except at convenient intervals. . . .

Shaded Streets for Shopping

Once such parkways were built and planted on a large scale, they might well influence the rebuilding of the commercial areas of the city. Here the narrow streets, and the unrestrained abandonment of shade trees on most of them, show a wanton neglect of a beautiful opportunity. The merchants' notion that the chopping down of shade trees on business thoroughfares is a sign of progress or business efficiency is one of those blind superstitions that cannot be justified by sound business practice. Shopping along shaded streets, as every visitor to Paris knows, is a far more delightful pastime than shopping in the barren waste of an American commercial district. It is likely to take longer, too, and this is to the advantage of the shop keeper; whereas the open glare of the hot pavements often tempts the buyer to reduce as far as possible the time spent on shopping.

In the older type of city planning, the park formed an isolated open area in the midst of a pattern of built-up blocks. In the new type

of city planning, with the development of super-blocks and closed cul-de-sacs, treated as more or less self-contained areas for domestic services, the neighborhood ribbon park becomes the very core of effective design. It is the natural site for the elementary school and, in general, it makes it possible for the child to walk to and from school without crossing a traffic street. This gives the school the quiet necessary for good work, and brings the park itself closer to the door of the individual home. . . .

Preventing Future Land Overcrowding

This brings up one further point: the close connection between a sound park policy and a program for rehousing the occupants of decayed and congested areas. The rational control of land use, with respect to density of occupation and open spaces, is an indispensable part of any valid park system. Through the creation of parks, the city establishes a proportion of open land to occupied land for the city as a whole. This, however, is only a part of a well-oriented program. Such a standard of open spaces and density must be established for every area. In England, the vast rehousing developments of the last twenty years have been at average densities of twelve or less families per acre. This standard implies reasonable land values, and in turn it guarantees that such values will remain reasonable.

Under the police powers, the American city has ample constitutional means for controlling the density of population and extent of land coverage in the interest of public health and hygiene. Before these standards can be established and protected by law, however, the city will have to tackle a much more difficult problem: that of opening up the major land areas within the city for orderly human occupation. There can be no sound or effective planning of either neighborhoods or parks and playgrounds so long as land values here remain prohibitively high. High land values mean high rents; these conditions in turn place a premium upon congestion and upon bad types of architectural design.

By opening up for public housing territorially owned land on the outskirts of the city, by using the process of eminent domain to take over for public purposes land held against public interest out of use, by establishing low maximum densities of population per acre for all new developments, by enforcing the minimum standards of hygiene and sanitation in now overcrowded quarters—by these means a vigilant planning authority would correct the inherent evils of a short-sighted monopoly.

Park planning, in other words, cannot possibly stop at the edges of the parks: its greatest need is to infuse its standards of space and beauty and order into every other aspect of the city's developments. The park system is thus the very spearhead of comprehensive urban planning. . . .

"Spend on the High Levels"

In park planning, as in every other department of civic economy, the wise counsel is that of Emerson's: save on the low levels and spend on the high ones. It is poor economy to erect makeshift structures that will presently look stale and seedy, will rot or lose their coat of paint, and will either have to be replaced or form a permanent eyesore. It is real economy to build whatever structures are really needed in durable and handsome materials, whose annual upkeep is low, and whose life may be measured in decades and centuries, rather than in years. For, of all the parts of a city in which permanence may be expected, its parks rate highest; and that fact should be taken advantage of in the design of its structures.

City Planning and Junior Chambers of Commerce

IF any city in the world were to be completely destroyed and rebuilt according to a comprehensive, correlated plan, there is little doubt that it would be vastly better. It is not feasible, economically, to rebuild our cities all at once; but nevertheless a comprehensive plan can be worked out on the basis of careful study, and all new building and rebuilding can be required to conform with this plan. Thus in the course of time the city will be built in general conformity with the plan. Obviously, the effects of such planning are not felt immediately; but the benefits accrue to the rising generation. A city planning program is a forward-looking, constructive program, and as such should particularly appeal to any Junior Chamber of Commerce. It is a natural and ideal project for an organization of young, active, civic-minded men, who can accomplish much in helping to improve their home cities.

City planning has to do with the development of a municipality according to comprehensive and intelligent, coordinated thinking. It has to do with the proper location, the design, and even the financing of public lands and construction; and the regulation, by zoning and otherwise, of private lands and construction. Good city planning should eliminate the blighted area and the slum—which are as much the result of poor planning as of economic forces. Good planning should secure maximum use and benefit to the citizens of all public facilities, such as parks, streets, avenues, and boulevards; airports; police and fire stations; reservoirs and water systems; sewers; traffic control; docks, wharfs and quays; railroads; bus, trolley, elevated and subway lines; court-houses and other public buildings; lighting systems and power plants, etc. Good planning should stabilize and preserve real estate values by control of residential, business, and industrial districts to prevent dislocation and contamination, and to preserve health, efficiency, order, and scenic values. Good planning should save the taxpayers money, and give them more for what is spent. Good planning is good sense.

—From a mimeographed manual prepared and distributed by the United States Junior Chamber of Commerce through its City Planning and Beautification Committee (William Exton, Jr., Chairman, 135 Central Park West, New York).

Today's Opportunities

A young man once said to William Lloyd Garrison, "Had I lived in that day—!" Garrison answered, "It is always God's day, and the opportunity to serve is always here. If you cannot see the opportunity today, you would not have seen it then."

—From *The Civic Searchlight*, published by Detroit Citizens League.

Getting All Real-Estate Taxes on One Card

By John E. Shriver, C.P.A.
Research Director in Tax Accounting for
Delinquent Tax Commission of Ohio

If You Are in This Morass—

A COMPLETE investigation of the entire problem of accounting and collection methods relative to real estate taxes, including assessments, disclosed that present-day methods in a majority of tax assessing and tax collecting offices are a heritage of the far distant past and in most instances are not worthy of being dignified by the term "accounting records," being in fact merely memoranda, and in a large percentage of cases actually failing to account.

It may be surprising to know that in any number of townships, villages, cities and counties throughout the country which assess and collect real estate taxes there is no assurance and no method of definite knowledge that all properties within the taxable area are even on the assessment and tax rolls, or that those pieces that do appear are recorded for the amount for which they were legally assessed. In addition to these deficiencies, an astonishing amount of duplication of effort exists, and the methods are most inefficient.

These indictments are not directed at local tax officials, for they are not to blame.

In the beginning, descriptions of property were not involved and it was a simple matter to make a list of holdings of the few landowners on sheets of paper, which were rolled up and tied with pink tie tape for filing in "pigeonhole" files. Here we find the origin of the term tax roll and probably the expression "red tape" was started by those persons who had occasion to untie the rolls for reference to the records.

The old system worked admirably fifty or more years ago when tax delinquency was practically unheard of. Now there must be a systematic program for following up those taxpayers who do not pay their taxes on time.

The entire problem has become so intricate that tax assessing and collecting officials are to a large extent completely bewildered and the entire structure is about ready to topple of its own weight.

Get Onto Solid Ground

A complete real-estate tax accounting plan, like an accounting plan for a mercantile or other commercial establishment, should start with an inventory of assets on hand. In the case of real-estate tax accounting the assets are made up of the various parcels of real property within the taxing area, and the improvements thereon that are subject to taxation.

The first step is to obtain or have made a true and correct master map of the city to define the taxing area. This map should show all boundary lines such as wards, districts, subdivisions, additions, in the case of a city; and for a county, the boundaries or townships, villages, cities, districts, and other such natural divisions.

This master map should in turn be supported by detail maps of each of the divisions, and these likewise supported by block maps which show in detail each parcel of property within the section it covers.

Each of the block maps should be numbered or keyed into the section and master maps for purposes of identification. The individual lots or parcels should also be numbered within the block for identification purposes.

A large number of tax-collecting local governments have already felt the need for a complete set of such maps, and have had them made. Many others have WPA map-making projects under way. An alternative is through subscription to a map service.

Unit Assessment Records

With a complete set of maps as described, it is possible to set up permanent assessment records for each parcel of property, from which periodic or annual assessments can be intelligently made and positive assurance had that all properties are accounted for.

Real estate should be the least difficult of all tangible assets to control, since real estate is definitely fixed as to location, yet this one angle of tax accounting seems to have been the object of much legislative attention.

Some states require owners of real estate to file a return or rendition of all property owned, each year, and provide penalties for failure to do so. The returned items are placed in a "Returned Roll," and the items not returned by owners are listed in an "Unreturned Roll."

The weakness of such a plan is shown by the fact that in most such states the law further provides for a "Supplementary Roll" for listing properties found after the original rolls are completed.

It is only human nature for most people to wait until the last day to handle such a matter, with the result that it is not unusual to see lines almost a block long on the last few days of the required time limit, and sometimes property owners have to stand in line for hours at a time. Such requirements are especially objectionable to non-resident owners of property.

It is usually necessary to put on inexperienced extra clerks during such a period, and the assessor's office is in a turmoil and everyone in it overworked.

When assessment or tax rolls are made up from returns by property owners it is almost necessary for the roll to be arranged in alphabetical order, since all properties owned by one individual are naturally listed on a single return.

In most states where such returns are not used, it is customary to copy one year's roll from the roll of the previous year. In either case the tremendous amount of duplication of effort in the copying of names, addresses and property descriptions years after year, and usually from the assessment roll to the tax roll (if separate), then to the tax bill, and if unpaid, to the delinquent roll, is appalling. In some offices it is also customary to make up a field book for the use of the assessor when out in the field for checking valuations—another duplication.*

In addition to the duplication of effort, the opportunity for error is great, and there is danger of omitting parcels in the copying process.

Wherever the assessment or tax roll is arranged alphabetically, it is a safe bet that all the property is not in the rolls, for the physical task of checking such records back against lot and block maps or books is so great as to be almost impossible to accomplish.

Still another weakness of the conventional assessment roll is the fact that it contains only descriptions of the boundary lines of the properties and nothing that would assist in an intelligent appraisement of its value and no information whatsoever as to the improvements thereon.

As a result, some officials have set up auxiliary records, usually on individual file cards, on which can be recorded complete information as to the type of building, construction details, size, use or occupancy and other information that affects its value; which, though incomplete, is a forward step.

The assessment roll in list or book form, with its many inadequacies and duplication of effort, should be discarded in favor of a permanent individual assessment card for each piece of property, on which will be recorded in detail all information regarding the property that will aid in an intelligent valuation, and on which there is provision for recording the valuation, exemptions and subsequent valuation changes.

These cards should be arranged in strict geographical order, for under such an arrangement it will be a simple matter to check them back against the block maps for assurance that *all* parcels of property are accounted for. The cards should be suitably indexed to facilitate reference. An alphabetical cross-reference file should be set up by ownership.

Under an alphabetical arrangement there are never any two rolls alike. A parcel of property owned by Mr. Adams this year would appear in the front part of the first book, whereas it may be sold to Mr. Zies in the meantime, which would place it in the back part of the last book of next year's roll. There is always the possibility of losing a piece of property from the rolls entirely, in this transferring process. If assessment cards are used, it would mean the constant shifting of cards from one location in the files to another and consequent adjustment of controls.

One reason advanced for the alphabetical set-up is that all of one person's properties can be listed on one tax bill. A careful canvass of a number of large property owners reveals that they prefer separate bills for each piece of property.

An objection sometimes raised against mailing separate bills is the postage cost, an objection which is overcome in some places where the geographical arrangement is used, by sorting the bills into alphabetical order by owner before mailing; and in still others a code letter or number is placed in the address section of those bills for owners of two or more properties, so that these only are sorted by ownership.

Next Month
The Unit Tax Ledger

* *Field books:* Small loose-leaf books made up of individual sheets, duplicating the information shown on the permanent unit assessment record cards will provide permanent field books that will serve to simplify the task of gathering necessary information to set up the original assessment records, if that is a new project, and provide the assessor in the field with the necessary information to assist materially in making intelligent appraisals.

Sixth Diesel Unit for Bryan, Texas

By W. C. VANDERWERTH

TO our five Busch-Sulzer diesel-powered generators having a combined output of 2,020 kilowatts, a second 700-kw unit is being added. An additional load of 500 hp will be thrown on the power plant when the new waterworks program for the city is completed and the four pumps of 2,000, 3,000, and two of 1,000 gallons capacity are installed.

Operating income in 1919 was $32,559; in 1929 it was $103,057; in 1936, $140,946; and in 1938, $176,203. Operating expenses $22,035 in 1919; $42,109 in 1929; $43,559 in 1936; and $63,783 in 1938.

After deducting depreciation and other non-operating costs, net revenue for 1919 amounted to $3,541; for 1929, $44,040; for 1935, $68,337; for 1936, $84,353; and in 1938, $112,420.

In 1930 the domestic light rate ranged from 14 cents to 6 cents per kilowatt-hour, whereas today it is from 10 cents to a low of 2 cents per kilowatt-hour. The minimum monthly bill for light service is $2 per month. The power rates have likewise been cut from a high of 15 cents to a present top of 8 cents.

The city charter specifies the use for the revenue from all utilities. There is a reserve fund of $50,000, which has been invested in city and government bonds, to be used in case of emergency occurring in the light plant. This assures that ample funds will be quickly available in case heavy replacements must be made. The fund is provided for in the city charter.

In the business section there are 32 blocks of White Way, with street lights at nearly every intersection in the city. During the Christmas season, the streets of the business section are beautifully decorated by thousands of globes.

Teaching Citizens to Manage Their Cities

WHEN the people of a city want a city manager, it is recognition of the fact that *administrative* responsibilities, as contrasted with determination of *policies*, can ordinarily be entrusted more safely to appointive than to elective officials. That the wise city manager does not want to be more than chief of staff is indicated by this subject discussed at the 26th Conference of the International City Managers' Association in Detroit on October 9-12: "How Can a City Manager Best Avoid Becoming the Leader of the Council?"

The ideal answer of course is: By the electorate's being capable of getting competent councilmen. Possibly the most important function of the city manager is, by his acts in each department, to reflect council policy, and by his words to show the better ways.

Another problem of the city manager is to maintain public interest when everything is going dead right. Colonel C. O. Sherrill, City Manager of Cincinnati, warned: "Keep public interest or government will fail."

What Manner of Man?

The successful man, thrusting his thumbs in his vest and describing the qualifications for success, is rarely helpful. Even the most successful city manager does not do this. Yet there are city managers who have become institutions in their communities. J. Bryan Miller of Wichita Falls, Texas, is one of these, and as retiring President of the I.C.M.A., he named four essentials of successful management: judgment; tact, gained by experience; inspiration; and vision, inherent in the man.

Tact, said President Miller, is the quality of anticipating situations, of knowing what others' reactions will be, and of making compromises. Inspiration is a great gift, but it must be accompanied by a vision of the practical methods by which good results are attainable. On each project, the city manager must see the light at the other end of the tunnel.

Tact also means patience. Time and again L. J. Houston, Jr., for 21 years City Manager of Fredericksburg, Va., has suggested improvements, encountered council opposition, waited, and eventually received approval. Ten years ago he was permitted to modernize the refuse-collection system in the interests of the householder rather than for the sole convenience of the Department. He purchased cans and burlap bags for free distribution to residents, and a truck carrying 66 cans in 3 decks. Back-door service is provided three times a week during nine months, and twice a week in winter. The cans are emptied into the incinerator, and are then steamed out and returned at the next collection. The total cost is

At speakers' table, left to right: John H. Ames, City Manager, Ames, Iowa; Arthur M. Field, Chamber of Commerce, Memphis, Tenn.; Mrs. and Mr. L. Perry Cookingham, City Manager of Saginaw, Mich. (new President); Luther Gulick, Director, Institute of Public Administration; Mrs. and Mr. J. Bryan Miller, City Manager, Wichita Falls, Texas (retiring President of the I.C.M.A.); Roy S. Braden, City Manager of Greenbelt, Md.; Mrs. Braden; George R. Young, City Manager of Glencoe, Ill.; John F. Hassler, City Manager, Oakland, Calif.; H. P. Ford, City Manager, Tallahassee, Fla.

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$1.25 per capita, there are half a dozen complaints a year, and this simple practical system has caused a path to be beaten to Mr. Houston's office door. He told this at the breakfast meeting for managers of places up to 10,000 population, and it was said there that the one-third who do not have incinerators had "better begin looking for incinerators."

A year ago Mr. Houston bought a Ditto duplicator which "has already paid for itself" by making uniformly clear copies of specifications and reports, from 5 to 300 copies. One of these reports is an engineering recommendation that the city erect an electric plant. Fredericksburg's records extend back to 1782 and include historic signatures. At present they are kept in the City Manager's office, but are due soon to receive adequate housing.

Closely allied to the protection of records against fire is the production of current budget, tax, utility, and other city records by modern machines. Many of the smaller municipalities still regard these machines as a luxury, but machines are being produced to fit the purse and needs of all municipalities, so that accurate, legible, expeditious accounting and billing will become the rule. At present, one city of 9,000 population, having to write 2,000 tax bills yearly, 2,000 water bills semi-annually, and 1,200 gas bills monthly, claims to have no need of accounting machines, while a nearby city of 8,000 population uses a Burroughs bookkeeping machine and because of expanding service is considering buying another.

C. F. Lewis, City Manager of Morganton, N. C., asked the conundrum: If a city needs a sweeper and a flusher but can afford only the one, which shall it be? He is inclined to buy a sweeper and build a flusher. This evoked a discussion of home-made versus factory-built police radio. H. G. Crow, City Manager of St. Joseph, Mich., who presided at the breakfast session, said that "a locally built complicated machine costs more and you get less." Two-way police radio is of course thoroughly accepted, even where its principal achievement in a small place might happen to be —keeping the policemen busy outdoors.

El Reno, Okla., now has one-way radio but will soon install two-way RCA, with receivers also on one of its four pieces of fire apparatus, "and the use is as great for fire as for police service." City Manager George R. Young of Glencoe, Ill., who has a Western Electric two-way system, says radio is the best investment in efficient police operation.

Build Up the Police Force

Lively interest was evinced in per-capita police costs in the smaller cities. They varied from below $1 in isolated places to $2.25, $2.50, $3.00 and a top of nearly $7.00 in cities within metropolitan areas. The top figure is for Lake Forest, Ill., where, says City Manager John C. McNicoll, the cost is $50,000 a year for 17 men, using Ford cars equipped with two-way radio.

Clarence H. Elliott, City Manager of Plymouth, Mich., gives these principles for an efficient police force: (1) no politics on the part of the commission; (2) good personnel administration; (3) standardized wage; (4) merit principle; (5) training, including taking in an occasional convention; (6) the conditions of employment; (7) discipline; (8) good public relations; (9) right ordinances; (10) modern equipment.

Efficient Electric Operation

Clarence H. Hoper, City Manager of Alliance, Nebr., presented ten subjects for study by those responsible for the operation of municipal electric plants or considering having a plant:

1. Municipal bonds *vs.* revenue bonds. The latter are growing in favor and are being marketed successfully at interest rates as low as 1 to 2 per cent.

2. Depreciation accounting. The distribution system outlasts the plant by 20 years. Diesel life depends on speed and other technical factors.

3. Cost *vs.* profit rates.

4. Flat *vs.* promotional rates ("rates only go down").

5. Superintendent should be responsible to city manager where there is one.

6. Use of outside consultants.

7. The man who puts over a municipal plant is not always the best administrator.

8. Free services to city.

9. Establish an accounting system to determine costs.

10. Keep equipment at peak efficiency.

Told by City Managers

Chester B. Lewis, Mangum, Okla., says city owns all utilities, and he thinks they might be amalgamated.

Don C. McMillan, Ventura, Calif., has a public address system to give three-hour warning in case of disaster.

C. O. Sherrill, Cincinnati, advocated giving incentive to get off relief.

H. L. Woolhiser, Winnetka, Ill., keeps up to date a moving picture of municipal activity in his community.

A. P. Hancock, Kerrville, Texas, pays four patrolmen $125 per month each. They start at $90 and in six months receive $100; total police cost, $1 per capita.

Carlton C. Massey, Salem, Va., allows ten days to pay water bill, when 50 cents is added and a date for payment must be given; five days later, he cuts off service and charges 50 cents to reconnect.

E. M. Knox, High Point, N. C., makes Ditto copies for the Council of his 15-page monthly report and 20-page official budget.

J. Harry Nelson, Bay City, Mich., will install 25 park lighting heads of aluminum without glass, made by Line Material Co.

November Showings of "The City"

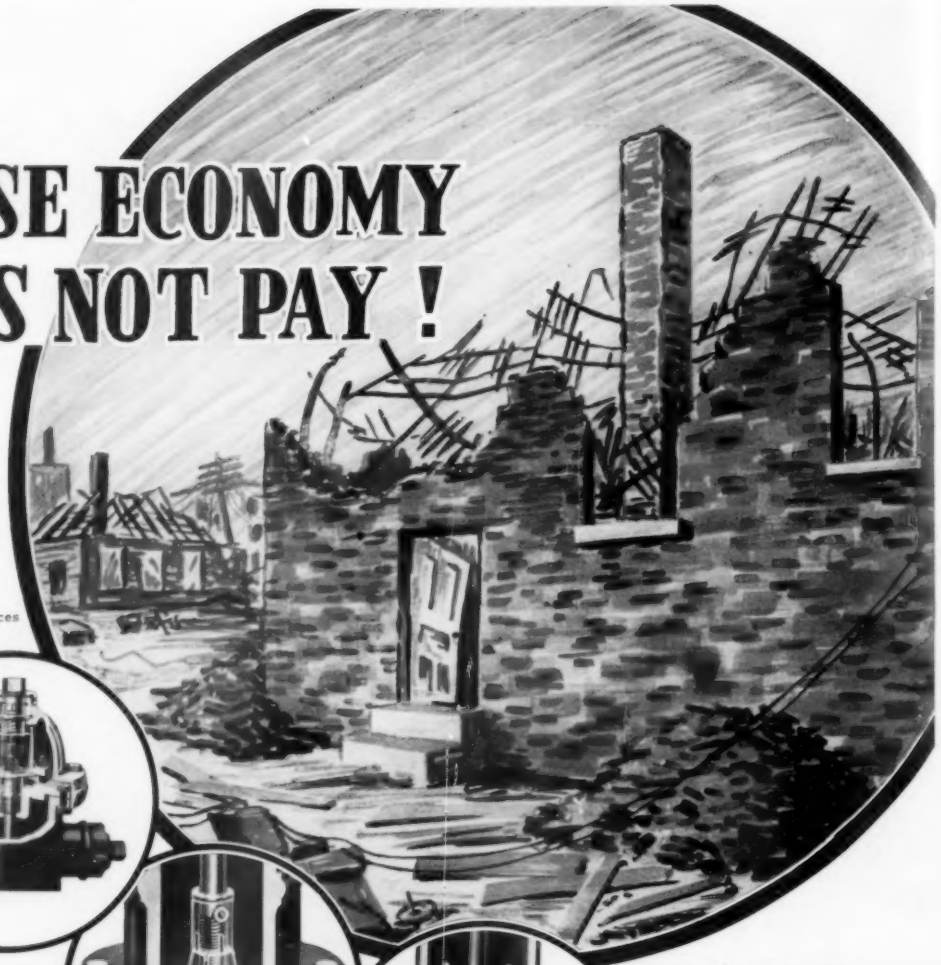
Theaters which have scheduled November showings of "The City,"* the dramatic "documentary" film produced under the auspices of a committee of the American Institute of Planners, are:

Baltimore, Little Theater; Boston, Fine Arts Theater; Greenbelt, Md., Greenbelt Theater; New York City, Ascot Theater, Fifth Avenue Playhouse and Thalia Theater; Perth Amboy, N. J., Strand Theater; Philadelphia, Studio Theater; San Francisco, Clay Theater; Toms River, N. J., Community Theater; Washington, D. C., Little Theater; Scranton, Pa., Riviera Theater; Wilkes-Barre, Pa., Strand Theater.

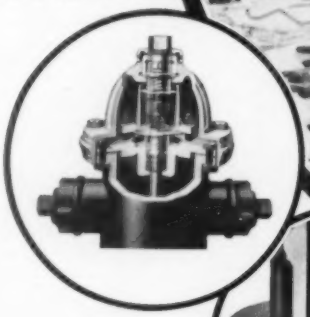
Inquiries as to availability of "The City" for commercial showing or civic meetings should be addressed to World Pictures Corporation, 729 Seventh Ave., New York.

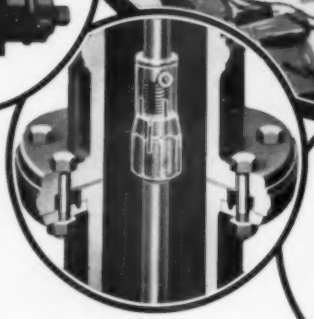
* See THE AMERICAN CITY for June, 1939, page 129.

FALSE ECONOMY DOES NOT PAY !

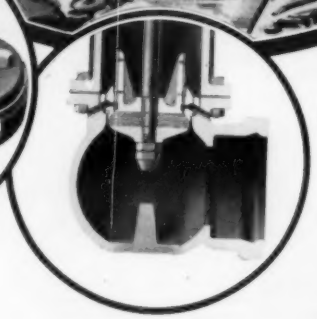


SELF-OILING TOP
Lubricates all Bearing Surfaces under FORCED PRESSURE.





SAFETY FLANGE AND COUPLING
Absorbs all Shock When Hydrant is Struck. Protects all Vital Parts from Damage.

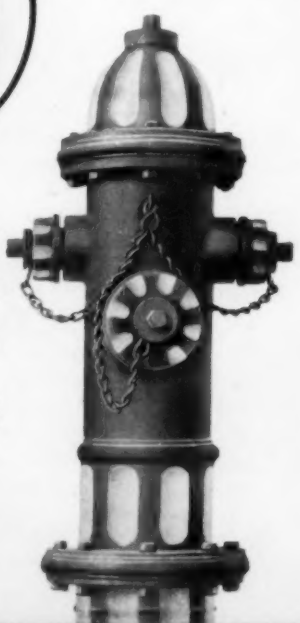


COMPRESSION TYPE MAIN VALVE
Easily Removed Through the Barrel. Large Double Drain Valves.

Failure of equipment often takes its toll before the fallacies of false economy are brought forcibly to the front. Notice why it is REAL ECONOMY to install Mueller-Columbian Fire Hydrants.

• First . . they have a Self-Oiling Top that keeps all working parts constantly immersed in an oil bath, minimizing wear and insuring a hydrant that always operates instantly and easily. • Second . . the Safety-Flange feature confines damage by traffic accidents to two inexpensive parts and the hydrant need be out of service only a few minutes. • Third . . large double bronze bushed drain valves assure complete drainage when the hydrant is in closed position. No chance of freezing.

These are a few of the factors that mean REAL ECONOMY. See that your hydrants give you complete protection. Ask any Mueller Representative for further details.



MUELLER CO.

CHATTANOOGA, TENN.

Contract Collection with Disposal in Municipally Owned Incinerator Features

Refuse Handling in New Bedford

By A. M. Thresher
Superintendent,
Department of Garbage Disposal,
New Bedford, Mass.

FOR some years previous to 1923, the city of New Bedford operated a garbage-reduction plant which involved high operating costs and gave considerable trouble from odors. In 1923 the reduction plant was destroyed by fire, and for three years thereafter makeshift methods, employing what was left of the reduction plant, were used for the disposal of garbage in this city of 111,642 population covering an area of 19.4 square miles, about 10 square miles of which is furnished with refuse-collection service.

Incineration Adopted

Shortly after the fire in 1923, engineering studies were made to determine the best method of disposal of the city's refuse. As a result, specifications were prepared for an incinerator having a capacity of 100 tons in 24 hours. Eight bids were received, ranging from $60,000 to $280,000. Following an analysis of the bids and plants, a contract for the construction of the plant was awarded to the Superior Incinerator Co. at a cost of $99,500. This plant was completed and accepted toward the end of the year 1926.

The plant has four furnaces, each having three cells with a grate area of 156 square feet each. A stoking aisle passes through the center of the building, with two furnaces on each side of the aisle, each pair of furnaces being served by separate chimneys located at opposite sides of the building.

Relatively little mechanical equipment is used in the operation of the plant. The refuse trucks go up under their own power to the charging floor at a ramp, passing over a platform scale where they are weighed, and then the load is discharged directly into the furnace. Electric chain hoists are provided to raise and lower the heavy fire-brick-lined charging-hole covers. The furnaces are of the sprung-arch type, the ashes being removed from the furnaces directly onto the stoking floor, shoveled into ash trucks, and used to fill in low land at the rear of the plant. The forced-draft equipment consists of two 5½-foot Sirocco blowers, each driven by a 15-hp electric motor. It has been impracticable to use these blowers with the method employed in charging the furnaces.

Collection Methods Alter Incineration Costs

The incinerator was put into operation in January, 1927, and has been operating continuously for the past twelve years. The operating costs since the plant was first started have varied considerably owing to the methods employed in the collection of refuse. For a time, garbage and rubbish were collected separately, the former being collected by contract, while the latter was collected by the Department of Public Works. The efficiency of operation of the furnaces with separate collections of garbage and rubbish was considerably less than when these materials were collected together. Separate collections existed from January, 1927, to June, 1929, during which period the cost of incineration averaged well above

DATA ON COLLECTION AND DISPOSAL OF RUBBISH AND GARBAGE IN NEW BEDFORD, MASS., IN 1938

Collection Data—1938

Rubbish	7,884 tons	27.39 tons per day	141 lbs. per capita
Garbage	12,874 "	44.95 " " "	231 " " "
Total	20,758 "	72.34 " " "	372 " " "
Cost of collection for 1938			$83,364.59
" " " per ton			4.19
" " " per capita			0.746

Operation of Incinerator—1938

Supervision and labor	$19,861.92	$0.956 per ton
Other than personnel	2,881.73	0.138 " "
Workmen's compensation and medical	500.13	0.024 " "
Outlay	214.46	0.01 " "
Total	$23,458.24	$1.128 " "
		0.21 per capita

Combined Costs of Collection and Operation—1938

	Annual	Cost per ton	Cost per capita
Collection	$83,364.59	$4.19	$0.746
Incineration	23,458.24	1.128	0.21
Total	$106,822.83	$5.318	$0.956

Cost of collection and incineration for the 12 years ending December 31, 1938, are shown on the following tabulation:

Collection Data for 12 Years Ending Dec. 31, 1938

Rubbish	85,180 tons	
Garbage	145,147 "	
Total	230,327 "	Equivalent to 19,194 tons per year
Average cost of collection		$82,613.99 per year
" " " "		$4.42 per ton

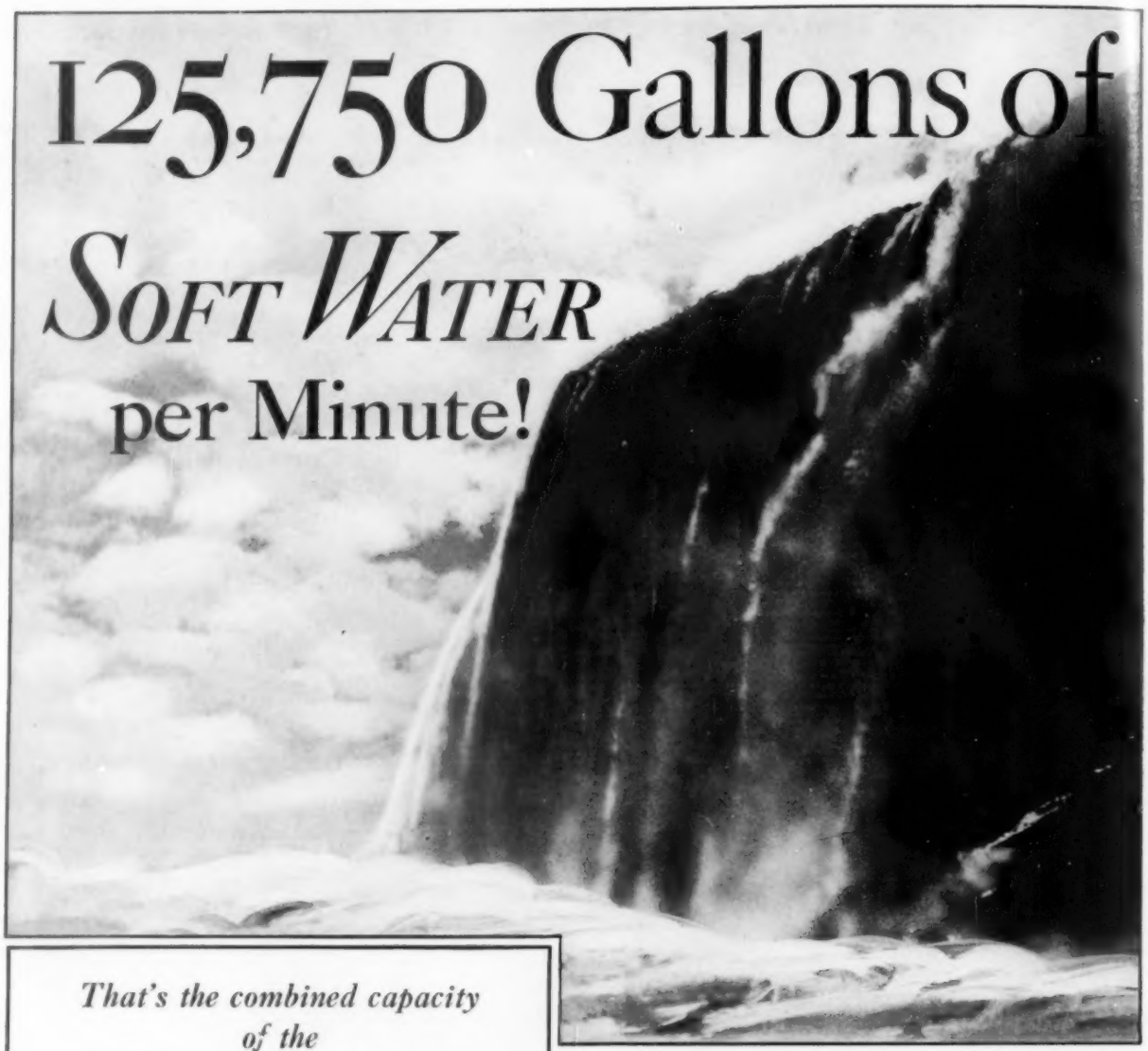
Operation of Incinerator for 12 Years Ending Dec. 31, 1938

Supervision and labor	$284,379.13	$1.238 per ton
Other than personnel	57,683.47	0.25 " "
Workmen's compensation and medical	2,946.71	0.012 " "
Outlay	11,253.49	0.048 " "
Total for 12 years	$356,262.80	$1.548 " "

Combined Cost of Collection and Operation, 12 Years Ending Dec. 31, 1938

	Average cost per yr.	Cost per ton
Collection	$82,613.99	$4.42
Incineration	29,688.57	1.548
Total	$112,302.56	$5.968

125,750 Gallons of *SOFT WATER* per Minute!



That's the combined capacity of the

PERMUTIT SPAULDING PRECIPITATORS

installed to date

In less than 2 years, Spaulding Precipitator installations have grown in total capacity to a veritable Niagara. More than a score of these plants have been installed within the last few months. They range in capacity from 5,000 to 8,000,000 gallons per day.

Behind this amazing success lies a sound and worthy reason. Municipalities the country over want the luxury and economy of soft, iron-free water . . . and this new cold lime process has put it within reach of all!

If you want a plant that will soften more water per hour, yet take less space and less chemicals, investigate this new Permutit process. A free 16-page booklet showing operating principles, diagrams and actual installation photos of the Permutit Spaulding Precipitator is yours for the asking. Address The Permutit Company, Department G3, 330 West 42nd St., New York. No obligation!

PERMUTIT

WATER CONDITIONING *Headquarters*

During November we hope you will remember to mention THE AMERICAN CITY.

$2.00 per ton. Collection costs were also excessive, averaging about $5.00 per ton.

In July, 1929, the city entered into a five-year contract for the collection of combined garbage and combustible rubbish. As a result, both the costs of collection and incineration were substantially reduced. The cost of collection since 1929 has been as low as $3.50 per ton, and the cost of incineration has been as low as 89 cents per ton.

The New Bedford incinerator has been in constant operation for twelve years. The cost of repairs to the furnaces during this period has amounted to $10,342.16, or an average of $861.85 per year. On the basis of the total tonnage handled, the cost of repairs amounts to 4.44 cents per ton. Approximately 85 per cent of the cost of operating the incinerator is for labor, since the plant contains practically no mechanical equipment.

The Driveway to the New Bedford, Mass., Incinerator with the Building in the Distance, and a Portion of the Grounds, Showing the Side of the Entrance Ramp

The experience of twelve years' operation of the New Bedford incinerator attests to the success of this method of refuse disposal. The plant has served its purpose effectively and efficiently. The value of keeping complete and detailed operating records in a plant of this kind has been demonstrated beyond all doubt. Without such records there is nothing to guide a plant superintendent in his efforts to improve operation and reduce operating costs.

—From a paper presented before the Sanitary Section, Boston Society of Civil Engineers.

Two-Way Radio in Alexandria

THE beautiful old city of Alexandria on the west bank of the Potomac River in northern Virginia, and five miles south of the National Capitol, has a population of 40,000 and an area of 7.67 square miles.

With the remarkable growth of the city in the last few years, added responsibility prompted us to ask for police radio equipment. In the beginning, in the early part of 1932, we simply bought receiving equipment for our police cars and made arrangements with the Metropolitan Police Department of Washington, D. C., to have our calls broadcast by their station. This arrangement was very satisfactory until two-way radio developed. With one-way radio, it was of course impossible to know at once whether or not an alarm sent out had been received.

In the latter part of 1938 the proposition of two-way radio was discussed with our City Manager Carl L. Budwesky, who readily provided funds in our 1939 budget. We bought all our receiving sets from R. C. A. and built our transmitting equipment, fixed and mobile. We have a 100-watt fixed transmitter and four mobile 20-watt transmitters in the cruiser cars. Operating on a frequency of 31,100 kilocycles, the net has a working range of ten miles, or five miles beyond city limits proper. Car-to-car communication is possible for three miles normally, and often much farther.

Realizing that our police force of 40 men would not allow the detailing of additional inside personnel, we arranged the equipment so that the radio installation did not make the office force "top-heavy." This was accomplished by installing headquarters equipment in the office of the Captain of Police, with remote speakers and transmitter controls in a telephone booth at the front desk. Thus, our desk officers became radio operators and announcers in addition to their other duties. The telephone booth provides sufficient privacy.

The car installations differ somewhat from what may be termed standard practice, in that the microphones are permanently installed along with the receivers. The operator does not have anything to pick up and hold. Normally his receiver is in operation; if required to talk, the operator pushes a button and releases it when finished.

The aerial at headquarters also was purchased from R. C. A. and is the "J" type vertical half-wave radiator. It is connected to the fixed transmitter through the new type concentric cable, and results have been exceedingly satisfactory.

A radio coach class was held here for all members of the force, and 38 members have their third-class operators license. We have a first-class license to make adjustments as required by the Federal Communications Commission.

During the first few days that our system was in operation we had several convincing experiences. An ambulance driver going to a poison case, found the address wrong and asked aid of an accompanying police cruiser. The policeman called headquarters, where one of our sergeants knew the victim by name and his correct address. The patient was in the hospital in time to be pumped out and saved. A woman who had no telephone needed the fire department at night. She told the cruiser operator that her house was on fire and he immediately called headquarters, and the fire department was promptly notified. Another incident was that of chasing a driving drunk. One car giving chase kept advising others of his position, and soon the driver was hemmed in.

JOHN S. ARNOLD.

TAXPAYERS VOTE "yes!" FOR "CATERPILLAR" DIESEL POWER!

Taxpayers are more and more aware of the value of "Caterpillar" Diesel Power . . . and are quick to praise the government that gives them its advantages!

There's fuel-economy, first of all. Tractor or Motor Grader, a "Caterpillar" Diesel requires only a comparatively few gallons of low-cost fuel for an *entire* day's work. And, in the course of a year, its fuel-savings, alone, can amount to *many hundreds of dollars!*

Then consider the versatility of these machines. They'll operate all year around . . . serve in many different departments, including street, park and sanitation . . . and spare you from buying and maintaining specialized equipment that will do only certain tasks at certain times, and are more or less burdens the rest of the time!

On top of all that, "Caterpillar" Diesel Machines make a *further contribution to city savings* through their ruggedness and precision construction. They are built to deliver—*and they do deliver*—years of hard, efficient service with a minimum of expense for machine maintenance. See your nearest "Caterpillar" dealer or write direct.

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

The city of Minneapolis owns this "Caterpillar" Diesel No. 12 Motor Grader which is scarifying a surfaced street. It works eight hours a day and uses only 11 gallons of low-cost fuel for the day. This is the largest of three sizes of "Caterpillar" Diesel Motor Graders. Any one of the three is a builder as well as maintainer of roads and streets—capable of handling the whole job from curb to curb. In addition, they are efficient and economical on many other tasks such as airport and park construction and snow-removal.

This is how the city of Cloquet, Minnesota, keeps its 40 miles of streets and sidewalk open to traffic in Winter—with a "Caterpillar" Diesel D2 Tractor equipped with a Balderson snow-plow. Fuel-cost is only 13½c an hour! The same kind of economy can be had with a "Caterpillar" Diesel D2 Tractor on any other city work—pulling a blade-grader or a scraper for leveling; equipped with a bulldozer for filling and pit work; pulling rollers and mowers in the parks; handling garbage at the city dump.

CATERPILLAR

REG. U.S. PAT. OFF.

TRACK-TYPE TRACTORS · ROAD MACHINERY

Waterloo and Electric Utility Buy Current and Digester Gas

Contract Between City and Public Service Co. Provides for Purchase of Electricity and Sale of Digester Gas

THE city of Waterloo, Iowa, has entered into a contract with the Iowa Public Service Co. for the purchase of the utility company's electric power exclusively for use at its sewage-treatment plant and for the sale of the sewage sludge digester gas to the public service company. In this manner the city is able to dispose of all the digester gas produced at a rate of 35.5 cents per million Btu and is not faced with the problem of balancing the gas supply with the power demand. There is a coal differential rate in the contract which is quite high, so that there is only a small possibility of any increase in the electric rate because of increase in the price of coal.

The Contract

The contract, which is for the period from May 2, 1939, to September 1, 1943, and renewable annually thereafter, but with a cancellation clause permitting the cancellation by six months' written notice by either party, binds the city to purchase all its electric power requirements at the sewage-treatment plant from the Iowa Public Service Co. The company agrees to supply not more than 400 kva 24 hours a day continuously for the city at 4,000 volts at the sewage-treatment plant. For this the city pays $400 per month for 30,000 kilowatt-hours or less, and 1 cent per kilowatt-hour for the next 15,000 kilowatt-hours used, and 0.8-cent per kilowatt-hour for all electricity in excess of 45,000 kilowatt-hours. These prices are based on the cost of coal not exceeding $5.40 per short ton, and having an average heating value of 11,500 Btu per pound. The energy charge is increased 1/1000-cent for each 1 cent increase in the price of coal above $5.40 per ton. If the price of coal drops to less than $3.90 per ton, the energy charge is decreased in the same manner.

During this same period of time the company has agreed to purchase from the city at 35.5 cents per million Btu all gas generated at the sewage-treatment plant in excess of the requirements of the city for its use there. The contract requires that the city use due diligence to prevent the oxygen content of the gas from exceeding 2 per cent, and the heat content from falling below 450 Btu per cubic foot. The hourly delivery of gas from the city to the company must not exceed 10 per cent of the daily average delivery of gas for the preceding ten days.

The contract further requires that the company bill the city on the first day of each month for all current used during the preceding month, and that the city must pay such bills on or before the 20th of the month. A similar arrangement applies to the company's payment of bills for gas.

There is a further provision that the public service company will sell manufactured gas to the city for use at the sewage-treatment plant and agree to maintain an average heating value of 550 Btu per cubic foot and charge the city 35.5 cents per million Btu. After the first six months of operation, the price of the gas delivered by the company increased to 44 cents per thousand cubic feet. This provision was inserted to permit the city to use company gas for the first few months of operation of the sewage-treatment plant before sufficient sewage sludge gas was generated to take care of the requirements of the plant itself for heating water for the digesters.

Certain damage clauses in the agreement are those required in any such contract for the protection of both parties. Credit for negotiating this contract, which is beneficial both to the city and to the Iowa Public Service Company, is given to Ralph B. Slippy, Mayor of Waterloo.

Tax Limits Hit Home Owners and Laborers

HOME owners and laborers have been the principal losers as a result of laws limiting the power of local governments to tax real estate, James W. Martin, Director of the Bureau of Business Research of the University of Kentucky, and former Kentucky Commissioner of Revenue, charges in a report to the National Municipal League.

"Revenue losses have generally been replaced by tax measures which cost the average home-owner, and particularly the laborer, far more than the amount gained through reduction of property taxes," Dr. Martin maintains. "Although the most usual replacement levy has been the general sales tax in one guise or another, frequently other consumption taxes have also been imposed and have in some measure been substituted for the real estate tax."

Stringent tax limitation has also "seriously impaired local government credit," he asserts. "It is not true in practice that the adoption of tax limitation has materially relieved the public debt problem, reduced the average man's taxes, improved assessments, or otherwise constructively reformed the tax system."

Ohio, West Virginia, Michigan and Washington are cited as states with particularly inflexible tax limitation laws.

The report appears in the September *National Municipal Review*.

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Since 1922, when the first length of centrifugally cast gray iron pipe was commercially produced in this country by United States Pipe and Foundry Company, more than 100 million feet, or over 20,000 miles, have been shipped from our foundries. Today, U. S. Super-de Lavaud Pipe, centrifugally cast by an improved and patented *chill-free* process, has an unique metal structure, combining great strength with ductility and an extraordinary resistance to impact.

U.S. cast iron PIPE

for water works, gas, sewerage, drainage and industrial services.

U. S. PIPE & FOUNDRY CO.

General Offices, Burlington, N. J.

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Water Rates and Service Charges

1939—Part IX

Covering Domestic and Industrial Meter Rates, Discounts and Penalties, Installation Charges, Fire Hydrant Rentals and Fire Sprinkler Costs

Milton, Mass.

Present population	18,826
Population served	18,750
Number of active services	4,855
" " meters	4,855
" " hydrants	728
Miles of water main	93.5

There is a quarterly minimum charge of $3.00 for water service in Milton, payable in advance, which allows the use of 1,000 cu. ft. of water. All excess water is billed at 25c per 100 cu. ft. Bills are rendered on the last day of March, June, September and December, and in case any bill is not paid within 15 days from the date of bill, the water may be shut off and the meter removed without prior notice to the consumer. The water is not turned on again except upon payment of the amount due, together with a charge of $2.00 for turning on the water. If, through inaccuracies of the water meter or its failure to function, water passing through it has not been correctly registered, the quantity of water consumed is determined by the Water Department, and in making such estimates proper reference is made to the consumption registered during preceding periods. Bills are sent to tenants, but the liability of the owner for payment of bills is not waived or released.

Applications for service connections and the use of water are made in writing on forms supplied by the Water Commissioners. A cash deposit or its equivalent equal to the estimated cost of a service installation must be made with the Water Department before the installation is made. The Water Department furnishes one 5/8" or 3/4" meter to each consumer. If a meter larger than 3/4" is required, the consumer must pay the difference in cost between a 3/4" meter and the size required. Meters are maintained and renewed at the expense of the Water Department, except in the case of a meter injured through negligence of the consumer or any other person not an employee of the Department. In case of damage for which the Department is not responsible, the meter is repaired or replaced by the Department at the expense of the consumer. If the cost of repairs or of a new meter is not paid by the consumer within 15 days after notification, the water may be shut off until payment is made, together with a charge of $2.00 for turning on the water.

No charge is made for public or private fire hydrants or for installations of sprinkler heads for private fire protection.

WILLIAM P. MELLEY,
Superintendent, Water Department.

Mt. Pleasant, Mich.

Present population	8,500
Population served	8,000
Number of active services	2,000
" " meters	2,200
" " hydrants	130
Miles of water main	19

Following is the schedule of water rates established by the Mt. Pleasant Water Department:

First	500 cu. ft.	$ .30	per 100 cu. ft.
Next	7,000 " "	.15	" " "
"	6,000 " "	.12	" " "
"	86,500 " "	.08	" " "
All over	86,500 " "	.06	" " "

These rates are subject to a discount of 20% if paid within 15 days after the due date, which is the 15th day of the month following the end of each quarter. The quarters begin on the 1st day of January, April, July and October. Water passing through meters up to 1½" in size is billed at the rates above, and the minimum charge is $1.50 per quarter, subject to the discount if paid within the limits described. Water passing through meters larger than 1½" is billed at the same rates, but the minimum charge is in accordance with the following scale:

2"	$5.00	per quarter
3"	7.50	" "
4" or larger	10.00	" "

After the first of the following month, the Water Department adds $1.00 to the bill and reserves the right to turn the water off on unpaid accounts after the first of the following month without notice.

If a customer doubts the accuracy of the meter on his premises it is tested by the Department upon written request by the owner, who must pay a fee of $1.00 in advance to cover the cost of the test. If the meter is found to register over 5% more water than actually passes through it, another meter is substituted and the fee of $1.00 is refunded to the owner and the water bill adjusted in such manner as may be fair and just.

Applications for a permit for water service must be made in writing by the owner of the premises to be served or by an authorized representative at the office of the City Clerk. After a permit for a service connection has been granted, and before the Water Department makes the connection, the owner must pay the following permit fee for tapping the main, the installation of the service pipe from the main to the service cock, the service cock and stop box:

3/4"	$15.00
1"	20.00
1¼"	25.00
1½"	35.00

Where an outside meter box is set, $5.00 additional is charged, and where connections larger than 1½" are required, the owner pays the actual cost of installation.

There is no charge for public fire hydrants, but private fire hydrants connected to the city mains are billed at $15 each per year. There is no charge for sprinkler heads installed for private fire protection.

R. T. PAULLIN,
Water Commissioner.

Paris, Texas

Present population	18,000
Population served	18,000
Number of active services	3,442
" " meters	3,442
" " hydrants	332
Miles of water main	75

The water rates for domestic and commercial consumers are:

First	7,500 gals.	$ .33⅓	per 1,000 gals.
Next	30,000 "	.26⅔	" " "
"	37,000 "	.20	" " "
"	675,000 "	.13⅓	" " "
All over	750,000 "	.10⅔	" " "

A discount of 10% is allowed on all bills paid on or before the 10th of the month, and a 50c minimum monthly charge is made for which a consumer is allowed 200 cu. ft., or 1,500 gals. of water. A charge of 30c per month is made for meter rental for a 5/8" meter unless the customer buys his own. The Water Department regulations require that the consumer must furnish all meters larger than 5/8", or else a monthly meter rental is charged as follows:

1" meter	50	cents per month
1½" "	75	" " "
2" "	100	" " "
3" "	150	" " "
4" "	200	" " "
6" "	300	" " "

In addition to the above rates and rental charges, there is one special commercial rate of $90 minimum per month, which allows the use of 900,000 gals. per

Peoria Police "Line-Up"

by RCA

New two way police radio system eliminates former dead spots

☆

"I can highly recommend RCA ultra high frequency equipment and shall be glad to demonstrate it to any department that you may care to send to Peoria," writes Harry A. Mackley, Captain of the Peoria Radio Division.

This whole-hearted endorsement was earned by RCA equipment which operates under highly unfavorable conditions. High hills within the city of Peoria make radio coverage difficult. On a road behind one 300-foot bluff, a frequent scene of automobile accidents, it was formerly impossible to call for an ambulance by radio. RCA equipment does make these calls. To quote Captain Harry A. Mackley, "It has entirely cleaned up these dead spots in the city."

More evidence of the satisfactory service you can expect from RCA Equipment

From all parts of the country come reports similar to that received from the Peoria Police Department. We invite you to check this evidence at its source. Visit the RCA Police Radio Installations near you.

Let us help you solve your radio communication problems . . . we're ready to place the facilities of the world's greatest radio organization at your command.

For reliable performance...RCA Radio Tubes

RCA for POLICE RADIO

RCA MANUFACTURING COMPANY, INC., CAMDEN, N. J.
A SERVICE OF THE RADIO CORPORATION OF AMERICA

month, all water used in excess of that amount being charged at 10c per 1,000 gallons.

The Water Department makes no installation charge for regular domestic services, while all large services are billed at the actual cost of installation.

There are no hydrant rentals nor charges for sprinkler heads for fire protection.

W. F. HICKS,
City Engineer and Superintendent of Water Works.

Massillon, Ohio

Present population	26,000
Population served	26,000
Number of active services	6,886
" " meters	6,886
" " hydrants	625
Miles of water main	80

Bills for metered service are rendered monthly, based on the following meter rate schedule:

First	275 cu. ft. or any part thereof per month	$1.10 minimum charge.
Next	4,725 cu. ft. per month	$ .38 per 100 cu. ft.
"	10,000 " " "	.27 " " "
All over	15,000 " " "	.15 " " "

A discount of 5% is allowed on all metered water bills paid at the office of the company within 10 days of the date of the bill. The minimum charge of $1.10 per month, for which 275 cu. ft. of water are allowed, is subject to a discount of 5c if paid at the office of the company within ten days of the date of the bill.

There is a flat rate accorded to domestic consumers only, and to them only until meters can consistently be installed. In the meantime the following rates apply as listed per family:

5 rooms, not to exceed	two spigots	$ .65 per month
6 " " "	" "	.80 " "
7 " " "	three spigots	.90 " "
8 " " "	four spigots	1.00 " "
Additional for each	bathtub	.35 " "
" " "	toilet	.40 " "
Sprinkling lawns—per ft. front		.02 " "
" street—per ft. front		.02 " "
Horse or automobile, each		.23 " "
No single use less than		.65 " "

Rates to Building Contractors

Brick work	$ .13	per 1,000 brick
Plastering	.48	" 100 square yards
Concrete	.07	" cu. yd.

Or by measurement at the meter rate.

A discount of 5% is allowed on all flat-rate water bills paid at the office of the company within 10 days after the date of the bill.

Certain municipal buildings are allowed a quantity of water free, and all in excess is paid for at meter rates. These buildings and the quantity of water allowed are as follows:

City Hall	Not limited
Engine House No. 1	2,400 cu. ft. per month
" " No. 2	1,400 " " "
" " No. 3	1,700 " " "
Drinking fountains, etc., each	400 " " "

An allowance is made to the public schools based on the use of 9 gals. of water per day per pupil, with a school year of 200 days. Adjustments are made of the amount of free water yearly on this basis and the average number of pupils in daily attendance for the school year. Payment for water used in excess of the allowance annually is payable at the close of each school year in June. A discount of 1% is allowed on all municipal service bills paid within 10 days from the date of the bill.

Upon application, the company furnishes without charge and installs the required service and a suitable meter, in order to connect the customer's house piping with the service, except where meters are installed outside buildings in chambers or patent boxes, when the excess cost of installation is paid by the consumer. The charge for the installation or changing of a meter when removed because it is damaged in any way due to negligence of the consumer is $2.00 for meters 1" in diameter and smaller, and $3.00 per inch in diameter or fraction thereof for meters larger than 1", in addition to the cost of repairing and testing the damaged meter. No water meter is allowed to remain in service if it registers more than 103% of the water passed, or less than 97% of full capacity.

The company reserves the right to move and test any meter and to substitute another meter in its place. In case of a disputed account involving a question as to the accuracy of a meter, the meter is tested upon the request of the customer, without charge, providing a satisfactory test can be made in service. If removed for test, a charge of $2.00 is made for sizes up to and including 1", and larger in proportion, payable in advance of the test. If the meter tested is found to have an error in registration in excess of 3%, the fee advanced for testing is refunded and the bills corrected on the basis of one-half the time since the previous test. This correction applies both for over- and under-registration.

Applications for service pipes are accepted only if the premises to be served are adjacent to a main, and the company is not obligated to extend its main to serve the premises for which water service is desired. No application for service pipe installation is accepted between November 1 and April 1 unless the applicant agrees to pay any excess cost due to weather conditions during that period. The company makes the following charge for service pipe connections, including the tapping of the main:

¾"	$10.50
1"	13.50

Larger at cost

Where service pipe connections are desired on paved streets, the actual cost of digging up and replacing the pavement must be paid by the applicant.

A charge of $1.00 is made for turning on water or resetting a meter where the service has been discontinued for any reason whatsoever. In case of violation of any regulation of the company, or non-payment of water rates, the supply is cut off and the water is not turned on until all cause of complaint has been removed or the bill paid, with an additional payment of $2.00 for turning the water on, except when it is necessary to turn off and on at the main in the street, when the charge is for the entire cost.

The charges for fire hydrants for public fire protection are:

No charge for 599 hydrants now in service under the terms of a contract.

For each hydrant installed on public property as each 528 feet of main extension is installed, in addition to the 599 now in use and to be continued in use	$3.65 per month
For each hydrant on public property set at points intermediate to the above and in addition thereto, being in addition to the 2 now in use and to be continued in use	$1.70 per month

The private fire protection rate schedules for hose connections and automatic sprinklers are:

1¼" hose connection	$1.10 per month
1½" " "	1.40 " "
2" " "	1.70 " "
2½" " "	2.00 " "
Private fire hydrants	3.65 " "

Automatic Sprinklers

Size of Connection	Floor Space	Minimum Rate
2"	5,000 sq. ft. or less	$3.40 per month
4"	10,000 " " "	5.70 " "
6"	20,000 " " "	8.50 " "

$.14 per 1,000 sq. ft. per month for additional floor space.

A discount of 5% is allowed on all private fire protection service bills paid at the office of the company within 10 days of the date of the bill.

A. A. ULRICH,
Manager, Ohio Water Service Co.

Denton, Texas

Present population	11,000
Population served	16,000
Number of active services	2,905
" " meters	2,905
" " hydrants	230
Miles of water main	28.55

The minimum monthly charge for water in Denton is $1.00 per month, for which 455 cu. ft. is allowed without further charge. The following are the rates for water used:

First	10,000 gals. per month	$ .30 per 1,000 gals
Next	20,000 " " "	.25 " " "
"	50,000 " " "	.20 " " "
All over	80,000 " " "	.15 " " "

A 10% discount is allowed on all water bills paid on or before the 10th of each month.

Applications for service are made by licensed plumbers for their customers. The plumber is charged for the tap, and the city makes the tap and installs the service complete. Where a service is across a paved street, a charge of $10 is made for cutting the pavement where the cut does not extend beyond the center of the street. When it does extend beyond the center, a charge of $20 is made. The charge for the tap includes the actual tap plus the corporation, gooseneck and curb cock. The charge for a ¾" tap is $8, for a 1" tap $10, and for a 2" tap $40. For the service from the main to the curb the actual cost of pipe is charged, plus 15c per foot for cut and backfill.

All bills are payable monthly between the 1st and 10th of the month, and after the 10th service may be discontinued if the bill is unpaid. In the event of a discontinuance, a charge of $1 is made for turning on the service again.

There is no charge for hydrant rentals, nor for sprinkler heads for private fire protection.

W. N. HARRIS,
City Engineer.

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20% LESS CRIMES

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ON January 13, 1937 the Police Department of Hamtramck, Michigan, installed a 1-way Western Electric Police Radio System. With four patrol cars to cover its two square miles, the average time in responding to alarms dropped to between 2 and 3 minutes. The first year arrests of all kinds jumped 17% . . . from 2,167 to 2,538. Over a two year period the reported crimes dropped 20% . . . from 875 to 697.

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Western Electric Police Radio is giving added protection to 45,000,000 people.

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POLICE RADIO TELEPHONE EQUIPMENT

South Amboy, N. J.

Present population	8,900
Population served	8,800
Number of active services	1,750
" " meters	1,750
" " hydrants	143
Miles of water main	17 8

The monthly consumption charges for water used by water takers in South Amboy are:

First	2,000 cu. ft. per mo.	$.25 per	100 cu. ft.
Next	8,000 " " " "	.20 "	" "
"	90,000 " " " "	.10 "	" "
All over	100,000 " " " "	.085 "	" "

There is a minimum charge of $2.50 per quarter per tenant. Water charges are payable at the offices of the Board of Public Works on or before the first of the month following the date of the bill. Should the charges remain unpaid after the expiration of this date, the water is shut off and not turned on again until all charges are paid, together with a fee of $2.00.

When an application is made for a new service, the applicant must deposit $25 before work is started. An itemized bill is rendered when the job is completed, and if there is any balance of the deposit remaining it is remitted to the consumer. The supply pipe, including the corporation, curb cock, curb box, meter and fittings, are laid by the Superintendent of Public Works or under his direction. All meters are purchased by the property owner, but are serviced by the Water Department without charge.

There is a charge of $3.75 per quarter for a 6-inch private sprinkler service for fire protection, and a charge of $10 per year each for hydrant service and maintenance.

M. F. Nagle,
Superintendent, Board of Public Works.

Bridgeport, Conn. (and Suburban Towns)

Present population	207,000
Population served	190,000
Number of active services	34,400
" " meters	12,550
" " hydrants	2,375
Miles of water main	500

A fixed service charge is made to each customer, based upon the size of meter used and payable quarterly on the first days of January, April, July and October of each year. These charges do not include any charge for water, and are in addition to the proportional service charges for water consumed. The fixed service charges are:

⅝" meter	$1.50	per quarter-year
¾" "	2.50	" " "
1" "	5.50	" " "
1½" "	13.50	" " "
2" "	18.00	" " "
3" "	23.00	" " "
4" "	30.00	" " "
6" "	60.00	" " "
8" "	90.00	" " "
10" "	110.00	" " "
12" "	160.00	" " "
16" "	230.00	" " "

When supplied through one common meter, the charge for the first family, store or other similar premise, not including factories, is determined by the size of the meter, and the charge for each additional family, store or other premise is $1.50 per quarter-year.

In addition to the fixed service charges, all water supplied through meters is payable quarterly at the same time in accordance with the following schedule of rates:

First	20,000 cu. ft. per quar.	$.15 per	100 cu. ft.
Next	40,000 " " " "	.12 "	" "
"	60,000 " " " "	.09 "	" "
All over	120,000 " " " "	.06 "	" "

A customer having two or more meters on the same premises is billed at the scheduled rate for the quantity of water equivalent to the sum of the readings of all meters. A discount of 7.5% is allowed on the combined bills of metered consumers using 10,000,000 cu. ft. or more per quarter. If a bill remains unpaid for a period of over 15 days after mailing or presentation, notice is served on, or mailed to, the customer, that unless the bill is paid within 7 days from date of such notice the water supply may be discontinued. When the water is turned off under such conditions, it remains off until the amount owing is paid in full or until arrangements for payment satisfactory to the company have been made.

Special season rates and special high district rates are also in effect.

All meters are furnished and set by the company and are kept in repair, except in case of misuse or damage by frost, hot water or external causes, in which case the expense of repair must be borne by the customer. The company furnishes new meters to replace those frozen or impaired by such causes only on receipt of a deposit to cover the cost of repairs. This deposit is not less than $5.00 for ordinary house meters. When the cost of repairs is ascertained, the balance, if any, is returned or any excess must be paid by the customer.

If a customer has reason to believe that a meter is not registering accurately, the company replaces the meter with another if requested to do so. If the meter removed is found to be registering within 2%, the customer is charged for changing the meter, but if the meter is found to be registering in excess of 2% the company makes the change without cost and rebates the customer's last bill on the basis of the average excess that has been found under test.

Water used for public buildings, drinking fountains, schools, etc., is charged for at the regular meter rates.

Written applications for service must be made on a form prescribed by the company, and charges paid as early as the day previous to the one on which tapping is to be done, before any connection is installed. A separate tap and service must be provided for each house; and where a double house has a staircase on each side, two services are required. A tap in the mains or distributing pipes is made by the company's tappers, and if service pipes are not laid by the company the work must be left uncovered until inspected by the company, which is done promptly. The company furnishes the corporation taps, making the following charges for the expense of installation and for the use of the taps:

¾"	$4.50
1"	6.00
1½"	8.50
2"	10.50

The charges for hydrants and fire service to municipalities is $10 for each public hydrant owned by the company within the limits of the municipality. An additional charge of 1.41 cents per inch-foot is made for all pipe of over 4" in size in service annually. Private fire hydrants are billed at $35 each per year, the rate being payable quarterly. Sprinkler systems are supplied at the regular meter rate, but no charge is made for water used for testing purposes or in case of fire.

D. H. Hall,
Superintendent, Bridgeport Hydraulic Co.

Lake Forest, Ill.

Present population	6,558
Population served	7,000
Number of active services	1,400
" " meters	1,350
" " hydrants	378
Miles of water main	64 00

The water rates in Lake Forest are divided into a monthly minimum service charge as shown below, a quarterly rental charge as shown below, and a uniform charge of 21c per 1,000 gals. of water used. A discount of 1c per 1,000 gals. is made if the bill is paid within 20 days of date:

Monthly Minimum Service Charge

Meters up to and including 2" size	$ .50
" " " " " 3" "	6.75
" " " " " 4" "	12 00
" " " " " 6" "	27 00

Meter Rentals

⅝" meter, quarterly in advance	$ .63
¾" " " " "	1 07
1" " " " "	1.45
2" " " " "	3 40

The charges for the installation of water services vary from $6.50 for a ¾" service to $150 for a 4" line.

There is no charge for private fire hydrants nor for sprinkler heads for fire protection, but a lump sum of $9,200 is paid by the city of Lake Forest to the Water Department for the maintenance of hydrants and water used through them for public services including fire protection.

J. C. McNicol,
Manager, Water Department.

Decatur, Ill.

Present population	59,000
Population se ved	59,000
Number of active services	14,931
" " meters	14,931
" " hydrants	1,005
Miles of water main	115

The quarterly water rates in Decatur are:

				Cents Per 100 Cu. Ft.
For	1,300 cu. ft. or less			31½
Over	1,300 " "	to	13,000 cu. ft.	18¾
"	13,000 " "	"	67,000 " "	15
"	67,000 " "	"	134,000 " "	7½
"	134,000 " "	"	666,000 " "	6
"	666,000 " "	"	2,000,000 " "	5⅝
"	2,000,000 " "	"	4,000,000 " "	5¼
"	4,000,000 " "	"	6,666,000 " "	4⅞
"	6,666,000 " "	"	10,000,000 " "	4½
"	10,000,000 " "			4⅛

Minimum charge....$1.50 for 600 cu. ft. or less

Applications for water service must be made through a licensed plumber, who

● When the rest of your equipment is "holed in" for the winter, the "99" will still be in the running—clearing snow—making and breaking records as it has on maintenance and construction work.

With driving power on EVERY wheel, the "99" maneuvers in or out around slippery curves, and all the while bucks heaviest drifts. There's live power right back of the plow, an exclusive feature. And, front and rear wheels can be steered, in whichever direction will best resist side thrust of V or wing.

Expanding the usefulness of the World's most versatile motor grader, the new A-W Model "99" Loader strips sod off shoulders without previous blading, picks up windrows of excess material anywhere.

And in the Spring, there are days and months of solid work ahead; back sloping, pulling ditches, scarifying, discing, mixing, rolling . . . doing the entire job without extra help, with just this one machine.

There's no longer any question that the "99" is FIRST in performance and FIRST on the list of equipment you should own right now. Ask for a demonstration. Learn what this one-machine road builder means to you in reduced machinery investment, and lowered operating costs. The Austin-Western Road Machinery Co., Aurora, Illinois.

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Elevating Graders
5-Yard Tractor-Scraper
8-Yard Tractor Scraper
12-Yard Hydraulic Scraper

Why not remember to mention THE AMERICAN CITY?

taps the main, runs the service pipe and sets the meter, all at the expense of the property owner. The Water Department's charge for the installation of a water service is an inspection fee of $1.50, which is charged to the plumber.

There is no hydrant rental charged for either public or private hydrants, nor for fire services or sprinkler heads for fire protection.

MARVIN CAZIER,
Distribution Superintendent,
Municipal Water Works.

Palmer, Mass.

Present population	3,000
Population served	3,000
Number of active services	700
" " meters	497
" " hydrants	95
Miles of water main	11.1

The water rates in Palmer are as follows:

First	4,447 cu. ft.	$2.24	per	1,000 cu. ft.	(or less)
Next	11,333 " "	1.87	"	" "	
"	18,667 " "	1.73	"	" "	
"	26,667 " "	1.50	"	" "	
"	33,333 " "	1.35	"	" "	
"	40,000 " "	1.26	"	" "	
"	46,667 " "	1.09	"	" "	
"	53,333 " "	.98	"	" "	

The minimum allowance is 4,447 cu. ft., which is covered by the $10 advance payment made when a service is installed. The rental charge for meters, which remain the property of the Water Department, are:

5/8"	$3.00 per year
3/4"	5.00 " "
1"	8.00 " "

Meters are furnished at cost plus 5%. A collection charge of 50c is added to all water bills not paid within 30 days.

Persons or corporations wishing to use town water must file an application at the office of the Water Department on a special form, which must be signed by the owner or authorized agent of the estate upon which the water is desired. If the applicant is not the owner or the authorized agent, then an advance payment of $10 must be made and further payments made for water furnished as shown by the quarterly meter readings.

All services are installed by the Water Department, and costs more than $25 per service are charged to the consumer. The entire cost of extension of water mains for new developments must be borne by the applicant, but if the applicant places a main and services of such material as used by the Water Department and following the Department specifications, then the applicant is credited with the cost per foot established by the Department for each service, but in no case exceeding $25.

All services installed between December 1 and April 1 where installation could have been ordered at an earlier date carry an extra charge because of the digging in frozen ground.

The supply of water is cut off from any consumer who fails to pay his bill within 40 days after it has been rendered, and a charge of $2.00 is made for restoring the service.

Both public and private fire hydrants are billed at $15 each per year. There is no charge for sprinkler heads connected to regular service lines.

ROBERT E. PHANEUF,
Superintendent, Palmer Water Department.

Daytona Beach, Fla.

Present population	24,000
Population served	24,000
Number of active services	5,108
" " meters	5,108
" " hydrants	432
Miles of water main	128

The uniform water rates for Daytona Beach are 30c per 1,000 gals. consumed.

The following charges are made for installing various sizes of service and the deposit for the meter:

	Connection Charge for New Tap	Deposit for Meter
3/4"	$17.00	$5.00
1"	23.00	7.00
1 1/2"	25.00	9.00
1 3/4"	28.00	12.00
2"	44.00	15.00
3"	84.00	24.00

For the re-installation of a meter there is a flat charge of $3.00.

There are no charges for public or private fire hydrants, nor for sprinkler heads for private fire protection.

F. R. MILLS,
Superintendent of Water Works.

New Ulm, Minn.

Present population	8,000
Population served	7,000
Number of active services	1,500
" " meters	1,500
" " hydrants	193
Miles of water main	20

The water rates of New Ulm are:

First	1,000 gals.	per	mo.	5	cents per 100 gals.
Next	1,000 "	"	"	4 1/2	" " " "
"	1,000 "	"	"	4	" " " "
"	1,000 "	"	"	3 1/2	" " " "
"	1,000 "	"	"	3	" " " "
"	1,000 "	"	"	2 1/2	" " " "
Excess of	6,000 "	"	"	2	" " " "

The minimum bill is 50c per month, and all bills must be paid on or before the 20th of the following month.

A charge of $10 per year is made as hydrant rental for both public and private fire hydrants. There is no charge for sprinkler head installations for private fire protection.

J. W. ULRICH,
Superintendent, Water Department.

Urbana, Ohio

Present population	7,742
Population served	7,665
Number of active services	2,400
" " meters	1,000
" " hydrants	230
Miles of water main	30

The metered water rates, which are payable semi-annually in Urbana, are as follows:

First	45,000 gals.	$.25	per	1,000 gals.	
All over	45,000 "	.10	"	" "	

There is a minimum charge of $3.00 for a six-months period.

All applications for the use of water from the Urbana Water Works must be made by the owner or his authorized agent. A permit is issued with the distinct understanding that the property is to be held liable for all water rents. The permit must be paid for in advance, and then a service pipe is installed to carry water from the main to 6" inside the curb line. The charges are:

1/2" service	$6.00
5/8" pipe	7.00
3/4" "	8.00
1" "	11.00

These prices are charged in all cases except where the excavation requires the tearing-up of street pavement and base, then the charge for tearing up and replacing the pavement and base is added to the service charge. All services larger than 1" are billed at actual cost.

There is no charge for public or private fire hydrants, nor for sprinkler systems installed for private fire protection.

R. L. LARUE,
Superintendent, Urbana Water Works.

Tyler, Texas

Present population	27,500
Population served	20,000
Number of active services	5,700
" " meters	6,200
" " hydrants	362
Miles of water main	102

The quarterly meter rates for Tyler begin with a minimum of $1.00 which permits the use of 5,000 gallons. Additional water is billed at the following rates:

First	5,000 gals.	$1.00	minimum		
Next	20,000 "	.20	per	1,000 gals.	
"	100,000 "	15	"	" "	
"	500,000 "	12 1/2	"	" "	
All over	625,000 gals.	10	"	" "	

In order to obtain water service from the Tyler Water Department, the person desiring the service is required to fill out an application stating where he wants the service to be run and what size he desires. The service is then installed by the Water Department from the main to the property line of the street, and all costs incurred are charged back to the person signing the application. Only the actual cost of material and labor is charged, with the exception of 15% additional on the material, because of the handling charge. The person having the water service installed is then required to obtain his own plumber to run the service from the meter box into the house, and before the water can be turned on, a minimum water bill of $1.00 must be paid in advance. The city of Tyler installs a 5/8" meter without a deposit. On all sizes above 5/8" a deposit must be made by the applicant before the meter will be set.

There is no hydrant rental, either public or private, nor is there any charge for sprinkler heads for private fire protection.

J. M. LLOYD,
Superintendent, Water Department.

Kent, Ohio

Present population	8,375
Population served	8,500
Number of active services	2,460
" " meters	2,460
" " hydrants	186
Miles of water main	22

The quarterly meter rates for water in

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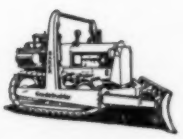

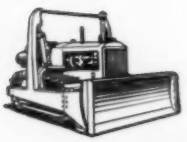

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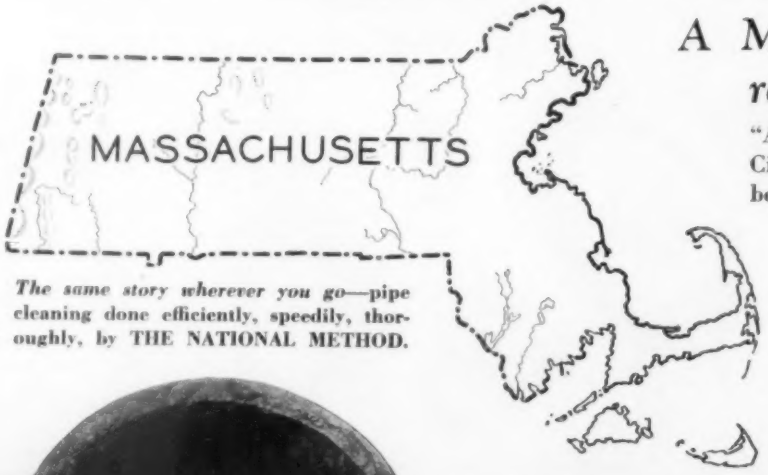

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Three good reasons for THE NATIONAL METHOD of water-main cleaning:

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National Water Main Cleaning Company
30 Church St. New York

A *Massachusetts City** *reports:*

"All pipe cleaning done in this City for the past 25 years has been done by this company (NWMC CO.) and all their guarantees have been met, that is, increasing capacities of pipe to original flow. They have the latest equipment, trained engineers and are able within one-half hour to restore pipe to original condition so that there will be no danger of lack of water in the event of a large conflagration.

"For these reasons, contract was awarded to NWMC Co. confident they will live up to our specifications and restore the flow of pipe."

* *Name of City and Superintendent on request.*

Kent, Ohio, are:

First	5,000 cu. ft.	$3.00 per 1,000 cu. ft.
Next	5,000 " "	2.50 " " " "
All over	10,000 " "	1.30 " " " "

	Minimum Charge	
¾" meter	$1.00 per month	$3.00 per quarter
1" "	3.00 " "	9.00 " "
1¼" "	3.50 " "	10.50 " "
1½" "	4.00 " "	12.00 " "
2" "	5.00 " "	15.60 " "
3" "	7.00 " "	21.00 " "
4" "	10.00 " "	30.00 " "
6" "	15.00 " "	45.00 " "

The water meters are furnished by the Water Department and are set, removed and adjusted by employees of the Department only. The Water Department tests meters for consumers on written request. If the meter is found to over-register by an amount exceeding 3%, another meter is furnished and a proper reduction made in the water bill without charge for the test. If the meter does not over-register by an amount exceeding 3%, a charge of $2.00 is made for testing a 1" meter and smaller, and $2.00 per inch or fraction thereof for meters larger than 1".

Applications for water service must be filed with the Water Department of the city on blanks furnished by the Department signed by the owner of the property or his duly authorized agent, stating the correct lot and street number of the premises. All service connections for pipes are installed at the expense of the property owner, either by the Water Department or by plumbers.

There are no public or private fire hydrant rentals charged.

The installation of fire-extinguisher service connections to supply water to sprinkler systems or private fire hydrants for fire-extinguisher service only are permitted when applications and plans have been submitted to the Water Department and approved. No connection is allowed larger than 6" in diameter, and must be provided with a detector check arranged for a bypass meter, or where required, a full-sized meter set in a concrete meter vault with an iron cover and the vault drained to the sewer. Water for such extinguisher purposes is furnished at 5c per sprinkler head per year, if no meter is installed. Where a meter is installed, the charges are made at the regular schedule of rates, but no charges are made less than $3.50 per month.

O. H. YOUNG,
Superintendent, Kent City Water Works.

Beaver Dam, Wis.

Present population	10,265
Population served	10,265
Number of active services	2,948
" " meters	2,948
" " hydrants	274
Miles of water main	33.85

The water rates at Beaver Dam for water measured by meter are:

First	1,000 cu. ft. per quarter	$.16 per 100 cu. ft.
Next	4,000 " " "	.14 " " " "
"	20,000 " " "	.10 " " " "
Over	25,000 " " "	.08 " " " "

A minimum rate of $1.50 per quarter for the first service is made to each consumer, plus a quarterly service charge depending upon the size of the meter, as follows:

¾" meter	$ 1.00
1" "	1.50
1¼" "	2.00
1½" "	3.00
2" "	5.00
3" "	7.00
4" "	12.50
6" "	25.00

Charges for water service are payable at the office of the Beaver Dam Water Co. on the 1st day of January, April, July and October; and if not paid within 30 days a penalty of 10%, and not less than 25c, is added. If payment is not made on or before the 10th day of the month following the month in which the charges become due, service may be discontinued without notice and, if discontinued, is not turned on again until all back water charges, together with a charge of $1.00, has been paid.

No free service is furnished to schools, fire stations or other public buildings, or for street sprinkling, flushing, or other purposes. All these services are supplied through meters wherever possible and are charged at the regular rates. Flat rates have been established, however, for the following public buildings and public purposes:

For flushing city streets and supplying water for drinking fountains	$350	per year
For the City Hall	60	" "
For the City Barn	100	" "
First Ward School	55	" "
Second Ward School	105	" "
Third Ward School	120	" "
Fourth Ward School	125	" "
High School Building	250	" "
Vocational School Building	45	" "

When there is more than one consumer on a meter, a service charge of $1.00 is assessed to each consumer. Each dwelling flat, suite, store, or tenant is regarded as one consumer in determining the service charge.

There is a service charge of $3.00 made for making a tap, $2.00 of which is returned to the Water Commission and $1.00 paid to the city of Beaver Dam under an existing ordinance. Whenever water service is turned off, either at the request of the owner or by order of the Commission, a service charge of $1.00 is made to the consumer whenever such water is again turned on.

A flat charge of $12,900 is made to the city for the installation, maintenance and water supplied to public fire hydrants.

JOHN LAFLEUR,
City Engineer.

Carthage, Mo.

Present population	10,000
Population served	10,000
Number of active services	2,750
" " meters	3,000
" " hydrants	296
Miles of water main	50

The charges for water in Carthage are:

		Per 100 Cu. Ft.
First	1,400 cu. ft. (10,500 gals.)	$ .35
Next	1,300 " " (9,750 ")	.27
"	17,300 " " (129,750 ")	.19
"	20,000 " " (150,000 ")	.15
Over	40,000 " " (300,000 ")	.10
Minimum bill		.50

A discount of 10% is allowed if bills are paid within 10 days from date rendered.

The application used in Carthage is in the form of a contract for water service and requires a deposit of $4.00 for residential services and $5.00 for commercial services. No charge is made for making the service connection.

There are no charges for public or private fire hydrants, nor for sprinkler installations for private fire protection.

N. G. JONES,
Office Manager, Carthage Water and Electric Plant.

Malden, Mass.

Present population	58,000
Population served	58,000
Number of active services	9,864
" " meters	9,800
" " hydrants	745
Miles of water main	108

The water rates charged in Malden are:

Under	40,000 cu. ft. per yr.	$.18 per 100 cu. ft.
40,000 to	500,000 " " "	.17 " " " "
Over	500,000 " " "	.14 " " " "

Meters are furnished, owned and maintained by the city unless damaged by the negligence of the water taker, frozen or stolen; in such case the meter is repaired or replaced at the consumer's expense. Each meter is subject to an annual minimum charge for water of $8.00 or a semi-annual charge of $4.00 payable in advance. The quantity paid for in advance ($8.00 minimum) is 4,375 cu. ft.

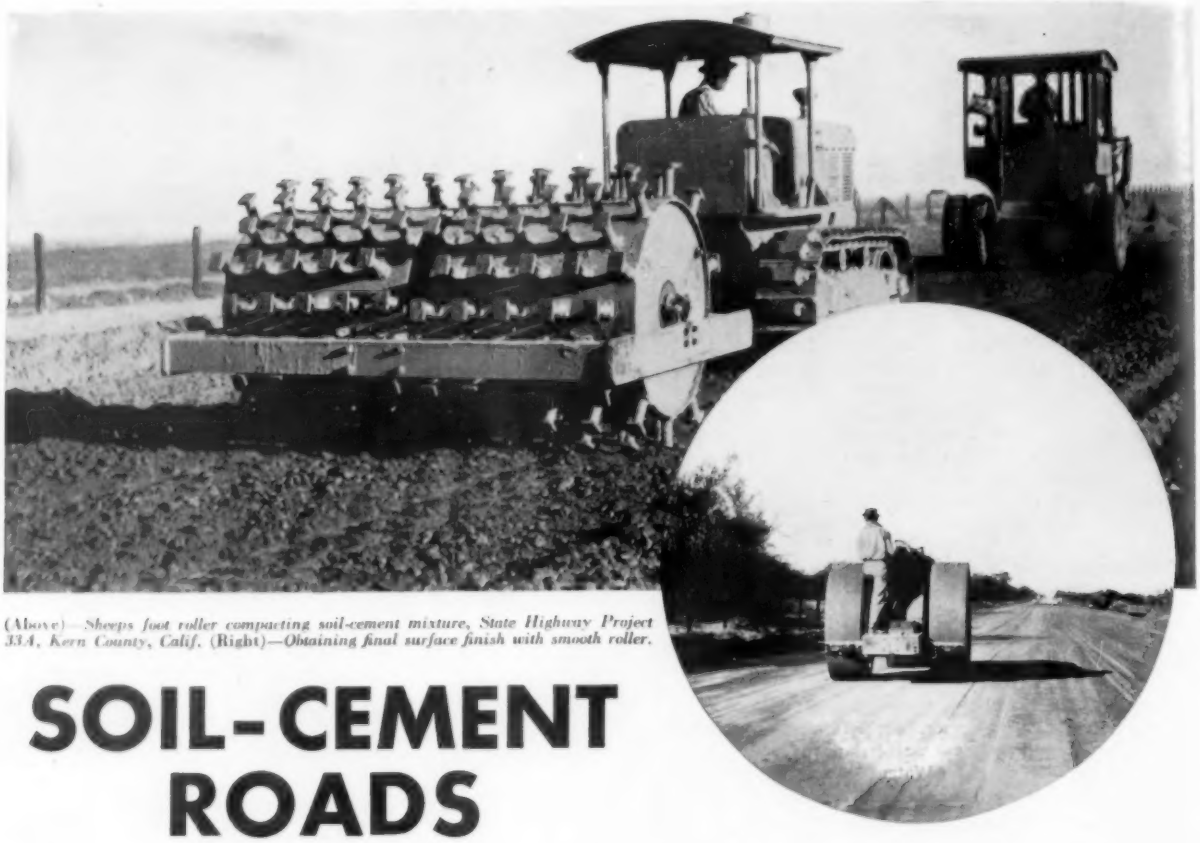
Any water consumer not satisfied with the readings of his meter may, upon request, and payment of $2.00, have the meter taken out and tested in his presence. If the meter is correct or registers in favor of the consumer, the $2.00 paid is forfeited as payment for the removing and replacing of the meter and testing. If the meter is found to register more than 2% against the water taker, the $2.00 is returned and a correct meter put in.

When an application for water service is made, a charge of $35 must be paid for laying a ⅝" service to the line of the street. When a service larger than ⅝" is applied for, all information regarding the premises must be submitted to the Board, which will determine what size will be installed. The entire cost of the service in this case is paid by the applicant, and a deposit, predetermined by the Board, must be made before the work is begun.

In all cases of non-payment of the annual bill for water rates for 60 days after it is due, or for the non-payment of bills for semi-annual or quarterly rates within 30 days after they are due, a summons is served, and then, unless the bill is paid within 3 days thereafter, together with the cost of the summons, the supply is shut off and the water is not turned on again until the amount due, together with the $.25 for the summons and $2.00 for shutting off and turning on, is paid. A charge of but $1.00 is made for shutting off and turning on water at the request of the consumer, unless it is done outside regular working hours, when the charge is $2.00.

No charge is made for public or private fire hydrants, nor for sprinkler systems for private fire protection.

D. P. SULLIVAN,
Superintendent, Street and Water Dept.



(Above)—*Sheeps foot roller compacting soil-cement mixture, State Highway Project 33A, Kern County, Calif.* (Right)—*Obtaining final surface finish with smooth roller.*

SOIL-CEMENT ROADS

New Answer to Light Traffic Road Problem

Extensive laboratory research has developed the basic principles of combining natural roadway soil and portland cement to produce a durable, weather-resisting material for low cost, light traffic roads.

This does not involve *cut and try methods* or *guess work*. Scientific tests in the laboratory predetermine the amount of cement, moisture, and density required for a particular soil to *insure* durability under the wetting and drying, freezing and thawing conditions encountered in the field. Proper hydration of cement is an essential factor in attaining this end. Good engineering control on the job is, of course, essential as the laboratory findings must be applied in construction . . . But although *scientific*, both laboratory and construction procedures are *simple*.

Here is a brief summary of construction methods:

- The existing earth or old gravel or crushed stone roadway is scarified to a depth of about 6 inches.
- The scarified material is pulverized with offset disc harrows, or other suitable equipment.
- A carefully predetermined amount of portland cement is spread evenly over the surface.
- Portland cement and pulverized earth are mixed with simple equipment such as field cultivators, gang plows, mechanical tillers and disc harrows.
- Necessary water is added with a pressure distributor and mixed (using same mixing equipment) with soil and cement.
- Sheeps foot rollers pack the mixture from the bottom up to required density.
- Blade grader shapes section to the required grade and crown; spike tooth harrow scratches out top compaction planes.
- Smooth-wheel rollers iron out the final surface which is then protected from rapid evaporation for a short period with damp straw, hay or earth.

Experience on 111 jobs throughout the country totaling 227 miles (completed to June 1, 1939), has demonstrated that this construction is practical, durable, low in cost and that simple, readily available equipment may be used.

Soil-cement roads should not be confused with portland cement concrete. They are not intended for the heavy-duty service where concrete is both superior and essential; but soil-cement does offer a durable and strong material in the low cost, light traffic field. It is good for secondary airport runways, too. Write us for the details.

-SEND FOR NEW HANDBOOK-

PORTLAND CEMENT ASSOCIATION
Dept. A11a-4, 33 W. Grand Ave., Chicago, Ill.

Please send copy of "*Soil-Cement Roads*" (free in U. S. or Canada) giving procedures for building low-cost, light-traffic roads with soil-cement mixtures.

Position or Firm.....

Name.....

Address.....

City.....State.....

Forward Steps

Reported by Municipal Officials, Chamber of Commerce Executives, and Others

New Winter Sports Arena for Small Minnesota City

CROOKSTON, MINN.—The new sports arena in Crookston, shown in the illustration, provides facilities for indoor tennis, volley-ball, roller skating and many other games of interest to both young and old. In winter the floor is flooded for ice skating and hockey. The excellent acoustical treatment and the size of the building—which can seat 7,000 persons—make it ideal for conventions and meetings.

Crookston, located in the heart of the Red River Valley, is a town with a lively interest in sports. Citizens have for some years supported a salaried baseball team. Interest has developed in a community recreation program, especially for children, and was reflected in an extensive park improvement project under the WPA. When a drive for a sports center developed, the City Council held a special election, the American Legion and the Veterans of Foreign Wars securing the services of election judges and the use of polling places free of charge to the city. The election resulted in a large majority in favor of a bond issue for the center.

Construction started on October 4, and the building was completed in ten months. In order to effectively carry on work during the winter months, the concrete buttresses were warmed and protected by special stoves and warming units. The total cost for the structure was $71,636, of which the Federal Government spent $42,807, the sponsor $28,829. The building is 110 by 233 feet. The roof, which reaches an extreme height of 36 feet above the concrete floor, has a laminated arch with trusses resting on the buttresses. The front portion of the building, which is of frame and stucco construction, houses the lobby, ticket office, check room, shower rooms, furnaces and fuel space. The playing floor, which is located in the rear of the building, is 80 by 180 feet, and has bleachers on three sides, seating 2,500. The front of the building has two stories. This provides a room on the second floor which is used as the headquarters of the Crookston Association of Public Affairs, and is large enough to handle meetings of various kinds.

The arena has been the center of many varied activities. The city has organized a professional hockey team, and is a member of the States-Dominion Hockey League. In October, the Crookston Association held an auto show in the building. The roller skating, last summer, more than paid the expense of running the building.

L. W. NEWBERRY,
City Engineer.

A Park and Arboretum for a Community of 300

KENILWORTH, PA.—This unincorporated community in Chester County has a population of slightly over 300. Its projected park and arboretum, shown in the accompanying plan, will, when completed, provide unusual botanical interest and esthetic enjoyment, year-round opportunities for the community and playground and athletic facilities for nearby schools.

Already completed are the entrance court, the small children's play area and two tennis courts. When present plans have been carried out, the park will contain, besides, a lake with special displays of water-loving plants, and a shelter nearby equipped with facilities for boating in summer and skating in winter; an outdoor theater seating 1,000, with dressing rooms to the east of the stage; a swimming pool, which, because of the lack of such facilities in the surrounding area, is expected to pay its own way; several picnic areas furnished with fireplaces and concrete tables and benches; a combination shelter and picnic pavilion with picnic stoves placed so as to provide for two of the play and picnic areas; baseball and softball diamonds and a 1/5-mile running track. In connection with the pool there will be a combination shelter and bath-house, the bath-house at pool level, the shelter at entrance-court level. There will be parking areas at the entrances to the park and at the shelter by the lake. The paths indicated are intended for the more important lines of circulation. In addition, secondary trails and grass paths will be needed, but they can best be laid out later in relation to the detailed planting arrangement.

The land offers possibilities for an outstanding arboretum of Pennsylvania flora. The site has interesting topographic variations (elevations from 61 to 109), and offers a wide range to meet the requirements of particular plants. It is planned to develop the area over a period of years. The strictly scientific function of the arboretum—to show a systematic arrangement of specimen plants, grouped by families and genera in so-called natural sequence—will be subordinated to the more popular function of showing the values of the plants as elements of landscape beauty.

The land for the project, which comprises about 30 acres, was secured in three separate tracts, by a trusteeship of five citizens of the town. The first tract—which has been used by the youngsters of the community as a baseball field—was bought in 1935, the last in 1939. Fourteen lots of the area were donated to the trusteeship. Funds for the rest, which amounted to $4,500, were raised by community festivals and private contributions of money and materials. The whole area has been leased to the Supervisors of North Coventry Township, Chester County, Pa., who are the sponsors for a Works

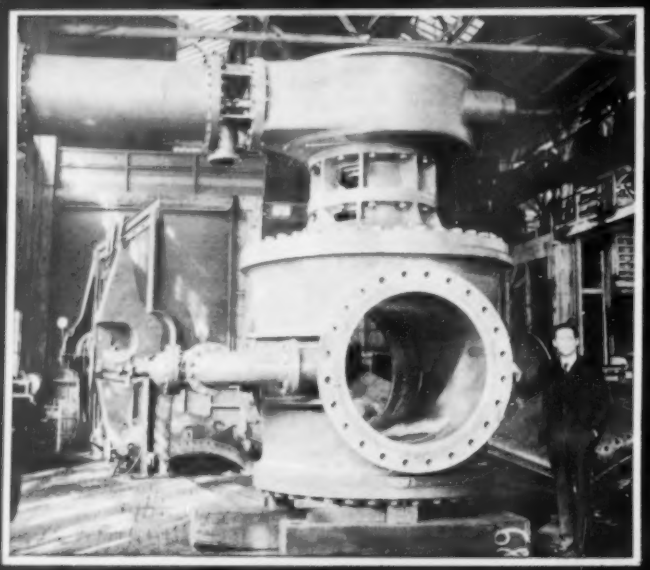
The New Winter Sports Arena in Crookston, Minn.

Specially Designed for Specific Service

Chapman

AUTOMATIC CONE VALVES

For The
COLORADO RIVER
AQUEDUCT



One of the six Chapman "Tapered Passageway" Automatic Cone Valves, assembled in shop of the Pelton Water Wheel Company at San Francisco, California.

PERTINENT POINTS

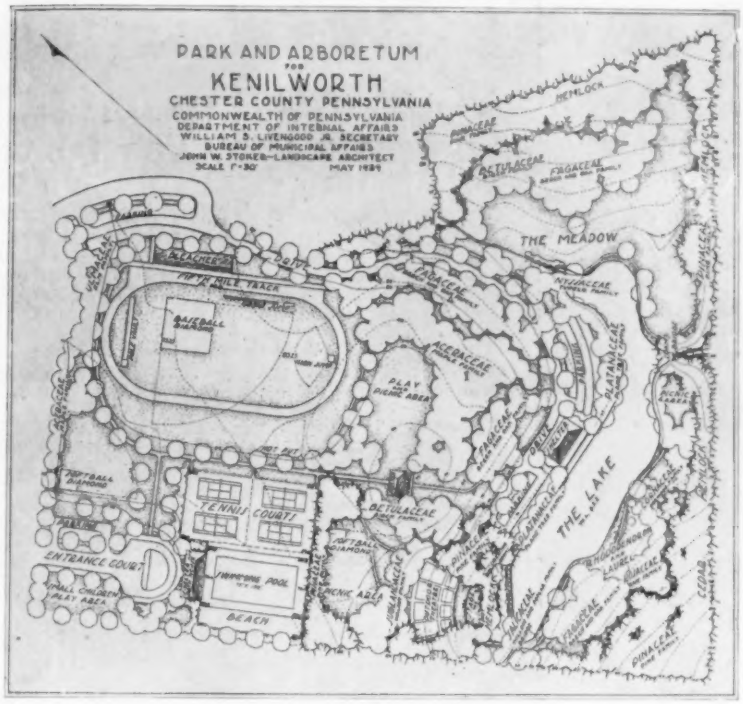
Length of Colorado River Aqueduct—242 miles.
Avg. Operating Head: Eagle Mountain Station —440 feet. Hayfield Station—444 feet.
Diameter of Discharge Line—each station—10ft.
Motors operating pumps — each station — 12500 H. P.
Valve Inlet—40½"; Outlet—53 7-8". Taper—8 degrees included angle.
Normal and Emergency Operation Automatic.
Normal Operation—Valve closes at uniform rate in 50 sec.
Emergency Operation—Valve closes 95% in 3 seconds, and completes closure in 10 seconds.

The valve illustrated here is one of six specially designed Chapman Automatic Cone Valves recently furnished the Metropolitan Water District of Southern California for the great Colorado River Aqueduct. Three are now installed at the Eagle Mountain Pumping Station, 110 miles west of the intake, and three at the Hayfield Pumping Station, 125 miles west of intake.

These valves are designed for "stop and check" service on the electrically operated pumps, a special feature being the *tapered passageway* which forms part of the increaser of the pumps.

Valves and operating mechanisms were designed by Chapman. Bodies and plugs were built by Pelton Water Wheel Co., San Francisco, where the valves were assembled and tested.

THE CHAPMAN VALVE
MANUFACTURING COMPANY
INDIAN ORCHARD, MASS.



Progress Administration project.

The whole community has been active in carrying out plans for development. The Parents-Teachers Association is equipping and planting the small children's playground. Local industries are supplying fencing, drainage, tile and surfacing for the tennis courts. Individual citizens are clamoring for sections of the plant material lists in order that each may do his part in the landscaping.

The division of City Planning and Landscape Architecture of the Department of Internal Affairs of Pennsylvania was called in to make development plans for the area, a service which the Division renders to all civil subdivisions that cannot afford to retain private landscape architects and city planners. Although criticism is sometimes heard that the Division performs services in competition with the work of private agencies, the activities of the Division, instead of impeding private enterprise, actually encourage business through the stimulation of land utilization, which would otherwise not be done or would be done in a slipshod method by untrained local interests. The results of the activities include increased sales of tools, equipment and construction materials, nursery material, sports and playground equipment, and the employment of hundreds of workers.

JOHN W. STOKER,
Chief, Division of City Planning and Landscape Architecture, Pennsylvania Department of Internal Affairs.

Planning a Fine City of Homes for an Even Finer Future

LADUE, MO.—The officials of Ladue have been active in planning and zoning since the first portion of the area was incorporated. The present city is a consolidation of three separate villages, Ladue, Deer Creek and McKnight, each of which had adopted zoning ordinances. One of the first acts of the new City Council was to authorize the drafting of a zoning ordinance to replace the three separate regulations. The planning consultants (Harland Bartholemew and Associates) were also authorized to prepare studies and reports upon a comprehensive city plan. The new ordinance was adopted in the fall of 1938, and the report upon the city plan has just been published.

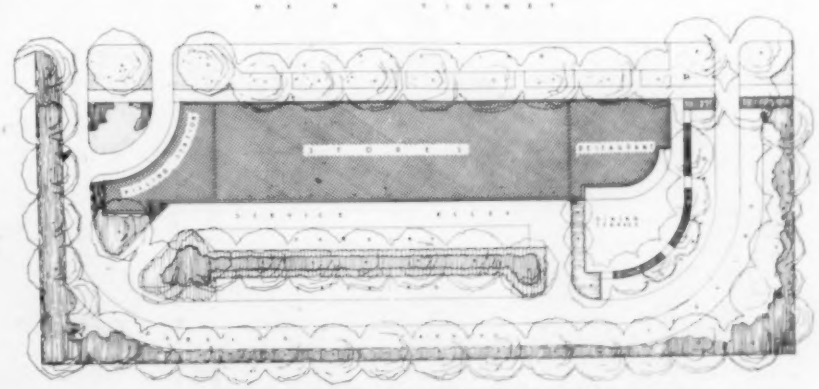
Ladue is located about ten miles west of the St. Louis business district, and is the largest incorporated area in St. Louis County. The city is not the largest in population, however, containing less than 4,000 persons. It comprises some of the finest residential development in the St. Louis Region. Many country estates are located within the corporate limits, and 79 residences are located on lots containing 5 acres or more. Only 9 residences are located on lots containing less than 10,000 square feet, and practically all of these are quite old. No multiple dwellings are found within the city, and there is only one two-family home.

10,000 Square Feet Minimum per Family

The new ordinance does not permit any duplexes or multiple dwellings, since there are ample opportunities for this type of development in the city of St. Louis and in other suburban towns. A portion of the city is placed in a zone requiring a lot area of not less than 3 acres per family, and the smallest lot area requirement is 10,000 square feet per family. While the city now contains only three or four commercial structures, enough area has been included in five commercial zones to provide shopping facilities for about 10,000 persons. Provision is also made for some industrial development along the railroads in the eastern portions of the city.

An interesting feature of the plan is the proposed development of the commercial areas. All the zones have considerable depth, affording opportunities for setting the structures back of the street lines, providing off-street parking facilities in the rear, and also complete landscape treatment.

The plan contains proposals for a major street system, much of which can



Plan for the Shopping Center of Ladue, Mo.

WORTHINGTON - GAMON

Worthington-Gamon Meters represent the utmost in durability and accuracy, to meet present and future requirements.

WORTHINGTON-GAMON METER CO.
General Offices: HARRISON, NEW JERSEY

WORTHINGTON - GAMON

Los Angeles Park Dept. now

AUTOMATICALLY CONTROLS LEVEL IN STORAGE TANK

two miles from pumps

Watching the water level in a distant storage tank and automatically holding this level always between the safe high and low limits is a job which the Park Department of the City of Los Angeles is now successfully doing by means of a Bristol's Metameter.

The installation consists of the transmitter at the storage tank which transmits continuously, accurately, instantly water level readings to the receiver located at the pumping station two miles away. This receiver records every change in level. It also controls the pump motor.

For installation details and further information, write for Bulletin 51-5S.

BRISTOL'S
TRADE MARK REG. U.S. PAT. OFF.

THE BRISTOL COMPANY, WATERBURY, CONNECTICUT

WATER LEVEL IN RESERVOIR MEASURED AND TRANSMITTED HERE
CAN BE ANY DISTANCE APART
TWO-WIRE TRANSMISSION LINE
WATER LEVEL READINGS RECORDED HERE
POWER SUPPLY
METAMETER TRANSMITTER MOUNTED AT RESERVOIR
RECORDING METAMETER SET-UP IN PUMPING STATION

93,100 FEET OF 48" MONO-CAST ENAMELINE PIPE ORDERED BY Wichita, Kansas

48" Mono-Cast Enameline Pipe loaded for shipment to Wichita, Kans.

INDICATIVE of Acipco's extensive facilities for handling large orders for large pipe, was the award early in October of an order for approximately 33 miles of Mono-Cast Enameline Pipe to be used in a new water supply line for Wichita, Kans. Included in this order were: 93,100 ft. of 48", 27,200 ft. of 42", 8,200 ft. of 36", 7,300 ft. of 24", 5,300 ft. of 20", and 25,400 ft. of 14" pipe. More than 2,000,000 feet of Mono-Cast Enameline Pipe are now giving highly satisfactory service. Write for literature.

AMERICAN CAST IRON PIPE CO.
BIRMINGHAM, ALA.

New York City Chicago Kansas City Minneapolis
Dallas Los Angeles San Francisco Pittsburgh
Cleveland

The Standard
for more than
50 Years

Automatic Pressure Control Valves
•
Feed Water Filters
•
Hydraulic Engines
•
Portable Fire Hydrants
•
Hydraulic Booster Pumps

ROSS VALVE MFG. CO., INC.
ARCHIBALD STREET TROY N. Y.

be secured through subdivision control. The Council has been particularly active in exercising control over new subdivisions, and has done much to improve the standards of development and protect the character of the city. The Council is now considering a comprehensive and modern set of subdivision regulations, and plans their early adoption.

Easements Along the Watercourses

An interesting trend that has been followed and which should be encouraged by the plan is the placing of easements along the watercourses. These areas are usually wooded and are retained in a native state, adding much to the informality of the city, as well as guarding against the necessity of ever constructing an expensive system of storm-water sewers.

The report also contains plans for the development of two small parks, one of which adjoins the city hall and will provide an outstanding community center. Methods of acquiring and developing these sites are now being considered.

The residents have much interest and pride in the city of Ladue. One of the major objectives in printing and distributing the report on the city plan was to enable the citizens to understand the possibilities and problems of the city and thus encourage further cooperation.

GEORGE C. HARGRAVE,
Assistant City Clerk.

New Municipal Golf Clubhouse for New Orleans

NEW ORLEANS, LA.—A new $85,000 municipal golf clubhouse, to be one of the finest and best-equipped in the United States, will be built in New Orleans' City Park, according to an announcement by Superintendent Marcel G. Montreuil.

The Superintendent himself designed the structure in cooperation with the architect and local golfing enthusiasts. Mr. Montreuil and his assistants have worked on the plans for more than a year, carrying out suggestions by New Orleans golfers, to provide a clubhouse of which the players would approve.

Mayor Robert S. Maestri bought the property adjacent to the present clubhouse with municipal funds; he also contributed the city's share of the building cost, the balance to be furnished by the Federal Government, funds which were obtained through J. H. Crutcher, administrator for Louisiana.

New Orleans is to have this municipal golf clubhouse

The clubhouse will be ready for the New Orleans $10,000 Open Tournament, held annually just prior to Mardi Gras. To the present building will be added a similar one, and a two-story structure has been designed to match the smaller buildings and will be located between them. This central building will have a porte cochère entrance leading into a general lounge, from which a stairway rises to the upper floor, where the lecture room and ballroom are to be located.

The number of lockers will be increased from 75 to 250. There are many new features, including a storage room for 450 bags, workshops, a grill, a bar, shower rooms, and a distributing room for caddies.

The increasing interest in golf here is attributed to the success of the New Orleans open, whose $10,000 purse is put up by Mayor Maestri and which now attracts golfers from all over the country to New Orleans at the Mardi Gras season.

Construction will begin immediately. The project is expected to be finished within six months.

NEW ORLEANS ASSOCIATION OF COMMERCE,
New Orleans, La.

A City That Coal Built Boosts Its Product

WILLIAMSON, W. VA.—This city believes in boosting its wares by using that which it produces and is noted for, so that all can see it—namely, coal.

Here is the Chamber of Commerce of this mining town situated on the Court-House grounds and next to the Town Hall. The walls of it are made of coal and are 12 inches thick. An airspace of approximately 2 inches is allowed between the coal bricks and the studding to comply with fire hazards.

And—speaking of fire hazards—this building, a permanent boost for the state of West Virginia coal, is insured, strangely enough, against—of all things—fire.

GEORGE E. BERGMAN.

Major Activities of State Planning Boards

THROUGH ITS REGIONAL CHAIRMEN and Counselors the National Resources Planning Board has assembled statements of current programs of the various State Planning Boards for the second half of the calendar year 1939. These statements are available in mimeographed form in Circular XI of the NRPB (North Interior Building, Washington, D. C.).

A tabulation shows that out of 39 states reporting, the numbers of states especially interested in the major activities listed are:

Basic Data*—19
Land—18
Water—29
Minerals—5
Forests—Conservation—7
Population—3
Transportation—9
Public Works—7
Economic—Industrial
Agriculture—Commerce—14
Education—4
Recreation—15
Health—Welfare—1
Housing—2
Government—Finance and Taxation—15
Local Planning—19
Mapping—10
Regional Planning—5
Institutions—3
Reports and Publishing—10
Other—11

* Includes inventories of resources and of real property.

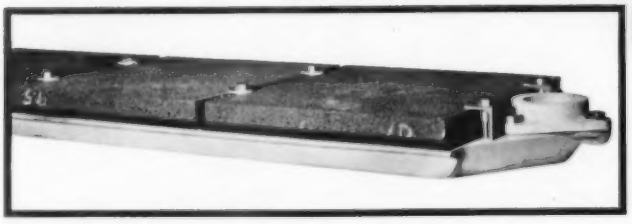
Built of Coal

YOU'LL FIND

Alcoa Aluminum Alloys

ON MANY IMPORTANT JOBS IN SEWAGE TREATMENT PLANTS

From skylights to diffuser plate holders, much of the metal here is long-lived Aluminum.



Burger diffuser plate holders add greatly to plant efficiency; it is easy to change plates.

Aluminum skylights, coping, spandrels, grilles, windows, doors, and sills are all serving a double purpose: helping to preserve the fine appearance of a plant, while holding maintenance costs to a minimum. Aluminum does not rust and it requires no protective painting.

Aluminum ventilators, ducts and heaters, electrical conduit and housings, floor gratings, stop gates and diffuser plate holders; this is equipment vital to the efficient performance of the modern sewage disposal plant. It adds to the efficiency of that operation by its ability to resist the attack of corrosive fumes.

Our engineers will welcome the opportunity to assist you in determining how Alcoa Aluminum Alloys can best serve you. ALUMINUM COMPANY OF AMERICA, 2172 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA ALUMINUM

When Excess Condemnation is a Gamble

To the Editor of THE AMERICAN CITY:

The same day that I read the article entitled "Land-Value Gains Could Lighten Gasoline Taxes," in THE AMERICAN CITY for September, I had occasion to consult the 1902 report on "The Improvement of the Park System of the District of Columbia"* and found in it a comparison of alternative plans for the treatment of Rock Creek Valley.

The first of the alternate plans considered was "to build a large covered masonry culvert or sewer for the creek, and to fill around and over this structure so as to obliterate the valley and raise it to the level of the adjacent lands, constructing a parkway or boulevard upon a portion of the filled land and subdividing the remainder into streets and lots for sale." The total cost of this project was estimated at $4,522,483. This was to be reduced by the sale of 1,160,000 square feet of land, the minimum value of which, after the improvement, was estimated at 86 cents and the maximum at $2.58 per square foot. The first alternative was proposed in 1897. Fortunately, the second alternative proposed in the 1902 report was adopted and the parkway was constructed so as to preserve the valley in its natural state, so far as that was possible. The entire area was kept for park purposes.

The chief difficulty with "excess condemnation" as a method of financing improvements is that it is a gamble. The most scientific students of real estate appraisal admit that the probable error of the determination of the present value of a particular property is about 30 per cent. In the determination of the future value of a particular property the probable error will be much larger, and it is impossible beforehand to pick out the areas which will increase most rapidly and those whose value will remain constant or even decrease. In the case of highways, the areas which benefit most may not be adjacent to the improvement.

Improvements do increase values. It is safe to say that the total increase in values produced by the parks of the District of Columbia has been more than enough to pay for them. On the other hand, it is impossible to say what proportion of the value of any particular parcel of real estate is due to the existence of a particular park.

In horse racing, the bookie bets that all the horses in a race will lose, and he is bound to be right on all but one of them. Each of his customers bets on an individual horse, and only one horse can win. When a city buys particular pieces of real estate, in the expectation that a certain construction project will increase the values of those properties, it is running a grave risk, because the increase may occur in some place else. As a matter of fact, the profits on real estate are secured by those owners who watch developments closely and sell quickly at the right time. A city cannot do this, as it has to follow a prescribed method, advertise for a set time, receive competitive bids, etc. This takes time, and the best of the demand has been satisfied before the city can act.

The total increase in real estate value to be expected from a proposed park can be figured with a fair degree of assurance. If this is three or more times the estimated cost of the park, the project will not be a financial drain on the community. It should be possible to determine the values produced by other improvements in the same way. If the increase in values is not sufficient to finance the project without hardship to the community, either it should be abandoned until a later time, or the plans should be restudied to find a cheaper method of accomplishing the desired end.

Whenever a city is restricted to the purchase of only such land as is needed for the improvement, there are many small parcels which cost as much as the value of the whole tract from which they are taken, and there are also remnants of land left abutting the improvement which are not of a proper size or shape for appropriate development. These scars disfigure the improvement and interfere with accomplishing its full purpose. There should be a power of incidental condemnation, to prevent this occurrence, but it should not be considered a major method of financing the improvement.

CHARLES HERRICK

Washington, D. C.,

EDITORIAL NOTE.—The power of excess condemnation, in THE AMERICAN CITY's opinion, ought to be exercised in the main either for the purpose set forth in the last paragraph of Mr. Herrick's letter, or for the acquisition of land needed for semi-public purposes such as large-scale low-rent housing developments. The other major objective of excess condemnation—the recapture of unearned increments in land values—could be achieved much more safely if state legislatures would authorize a rational system of land-value taxation than by municipal speculation in the purchase and resale of real estate.

* 57th Congress, First Session, Senate Report No. 166, edited by Charles Moore—Appendix D, p. 137.

Chamber of Commerce Defeats Proposal for Tax Discount

IN preparing the annual budget for the city of Providence, Mayor Collins recently included a number of proposals that were a marked departure from the usual budget procedure. One proposal was that there be granted a 5 per cent discount for the prompt payment of taxes. That met sharp criticism which was expressed effectively and plainly by the Committee on Taxation of The Providence Chamber of Commerce, which cited the fact that prompt tax collection had always been a distinguishing feature of Providence, that for several years past the collection of taxes had been in the neighborhood of 98 per cent during a three-year period.

The Committee declared that a much wiser expenditure of money could be made by the committee of a possible $500,000 that would be involved than to offer a discount on account of payment.

The proposed budget of the Mayor was defeated by the City Council, which, in place of his, prepared and approved a budget of its own. That budget was vetoed by the Mayor, and unless his veto is overruled, Providence will have to continue during the coming year on a budget similar to the draft of last year.

RICHARD B. WATROUS,
Executive Secretary, Providence of Commerce.

Henry Ford Urges Heavy Taxation of Idle Land

"I hope to see the day when all idle land will be taxed heavily enough to force it into use.

"There need be no fear of overproduction. There can be no such thing as overproduction if you measure production according to the needs of the earth's peoples."

—From a statement by Henry Ford, as reported in an Associated Press dispatch, October 3, 1939.

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Michigan Creates Land Board for Tax-Reverted Lands

SIX HUNDRED THOUSAND PARCELS of land which revert to the state of Michigan on November 3 because of tax delinquency will be managed under a land board believed to be the first of its kind, the American Society of Planning Officials reports.

In many other states, including California, Arkansas, New Jersey and Oregon, tax-delinquent properties have been piling up during the past ten years. California, for example, is making a classification study of 2,500,000 acres soon to become state's property for taxes, to determine whether they should be privately owned or be developed by the state. Two million acres of tax-reverted land in Oregon are undergoing similar study. The Arkansas Legislature early this year authorized its Land Commissioner to work with the State Planning Board on the classification and appraisal of 2,000,000 acres the state now owns.

The Michigan land consists of tax-delinquent properties which fell to the state at the May, 1938, tax sale. In addition to the 600,000 parcels to be managed by the new Land Board, which was created by the 1939 Legislature, there are about 2,000,000 acres of cut-over timber land in the northern part of the state under management of the State Conservation Department. Almost every kind of real estate—waste lands and abandoned farms, as well as improved properties—are in the lot. The Land Board, created for a period of four years, will try to return as many of these lands as possible to private ownership, so that they may be placed on the tax rolls.

During the next few months the Land Board will prepare lists of the properties, which will be offered at public sale on the second Tuesday of February each year, beginning in 1940. No bid will be accepted smaller than 25 per cent of the assessed value for the year preceding the vesting of title in the state. Money from the sales will go to each taxing unit in proportion to the outstanding taxes canceled when the state gained title to the land. Municipalities may bid, either individually or collectively, for lands they want for public purposes, and may ask that sale of any parcel be delayed for a year if they plan to purchase it later. Former owners have 30 days after the public sale to meet the highest bid and thus regain their land.

Although the state has no comprehensive planning program for use of the tax-reverted land, local officials are now attending training conferences to study such possibilities, the Society said. In some cases, one conference revealed, it would be more advantageous to retain the property in public ownership for use as municipal forests, recreational areas and future municipal building sites than to sell it back to private citizens.

Nebraska City Zones Beyond Municipal Limits

SUCCESSFUL MUNICIPAL ZONING of land outside the city limits is reported from Lincoln, Nebr. Seven years ago, the Nebraska Legislature enacted a special law which gave the city of Lincoln the right to regulate the use of property three miles beyond its boundaries. The Lincoln City Council subsequently passed an ordinance placing the three-mile area in the residential district, subject to all provisions of the zoning ordinance. Farming is one of the uses permitted, however, and permits for filling stations or other business buildings found necessary are granted by the Board of Appeals.

A number of cities control the platting of subdivisions beyond their limits, but Lincoln is unusual in having zoning control also.

Utility Companies Permitted to Lower Rates for Public Housing

TWO STATES — North Carolina and Pennsylvania—have ruled that utility companies may give low preferential rates on electric current to publicly owned and operated housing projects, the National Association of Housing Officials reports.

The special rate was justified by the North Carolina Utilities Commission on the ground that it costs less to serve an entire neighborhood with one meter than to give the same service to the average residential neighborhood with individual lines and meters for each family. Other reasons given were that the credit risk involved in federally-supervised housing is smaller, that the company could probably avoid promotional expense, and that the government-aided homes equipped with permanent appliances assured a steady consumption of current by those who otherwise might not be able to buy it.

Most housing projects, according to the Association, receive some kind of reduction on utility rates, but usually they must conduct their own negotiations individually. In North Carolina, Pennsylvania, and a few other states, utility companies by state ruling must act on a state-wide basis.

Municipal Gasoline Tax Dropped in Two Cities

TWO TYPES of municipal gasoline taxes have recently been written off the ordinance books in Macon, Ga., and New Orleans, La., information from the Federation of Tax Administrators shows.

Beginning October 1, the New Orleans gasoline tax became inoperative. It was repealed by a unanimous vote of the City Commission last month. The tax was first put into effect in November, 1936. Proceeds of the tax during the three-year period were used to finance the city's share of Federal works projects.

Macon's tax, a filling-station license levy based upon gasoline storage, was invalidated by the Georgia Supreme Court. The municipal tax was held to violate the state motor fuel tax law, which prohibits municipalities from imposing a tax measured or computed on gasoline gallonage.

Number of Governmental Units Decreases

MORE THAN 6,500 local governmental bodies with taxing powers were eliminated during the past five years, according to a recent census of taxing units in the United States by the Illinois Tax Commission, the Federation of Tax Administrators states.

The Commission's count shows that there are now 3,052 counties, 16,450 incorporated places, 118,667 school districts, 19,303 townships, and 3,624 other units of government in the country—161,144 units against the 1934 total of 167,699.

The ten states with the largest number of taxing units are Illinois, Kansas, Minnesota, Missouri, New York, Wisconsin, Michigan, Nebraska, Iowa and Texas, in that order. The range of these top ten is from 7,106 in Texas to 15,106 in Illinois.

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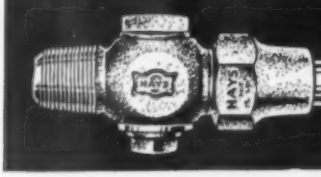

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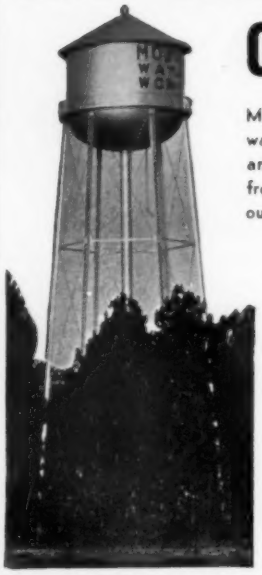

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Municipal Salaries to Be Reported under Tax Act

STATES AND MUNICIPALITIES, technically becoming employers under terms of the new public salary tax act, may expect to report salaries of their employees for 1939 income tax collections, says the Attorney-General Section of the Council of State Governments.

The public salary tax act made all salaries paid in public employment after January 1, 1939, mutually taxable under state and Federal income tax acts. Private employers in general are required to report the earnings of every employee whose salary totals more than $1,000 a year, or $2,500 if he is married.

Although the United States Bureau of Internal Revenue has not yet issued special orders for reporting the new taxpayers, it is the opinion of most officials that governmental employers, like other employers, will be subject to the reporting law. Some jurisdictions are therefore devising records to facilitate collection of the information, which is due by February 15, 1940.

Georgia City Parades Services for Citizens

A NON-POLITICAL, ALL-EMPLOYEE municipal parade is the way Columbus, Ga., chooses to tell citizens about local government services, reports the International City Managers' Association.

This year's parade, the first of its kind, included nearly 500 participants, from public works employees to nurses and doctors of the Health Department. Many of the employees were in uniform and marched with their equipment or carried posters telling how tax money is translated into services. Citizens who failed to see the original parade will see it in movies made for showing at local theaters and throughout the state.

The parade cost the city $700, or about one cent per capita for the city of 43,000. It is planned to make the demonstration an annual event.

Two Cities Adopt Police Identification Cards

BUFFALO, N. Y., AND INDIANAPOLIS, IND., have joined the increasing list of jurisdictions supplying their police officers with identification cards to protect the public and other police departments against fraud and impersonation, the International Association of Chiefs of Police reports.

In both cases, the identification information includes a photograph and fingerprints of the police officer, and the number of the shield he wears. The special identification was devised to prevent the fraudulent use of badges similar to those worn by members of the police department.

State police in Michigan, Ohio and California are supplied with the identification cards, and several eastern state police departments are considering their adoption.

Pittsburgh Planetarium Dedicated

ON October 24 Pittsburgh joined New York, Chicago, Philadelphia and Los Angeles as fortunate enough to possess a planetarium. Erected as a memorial to Henry Buhl, Jr., at a cost of $1,100,000, the Buhl Planetarium and Institute of Popular Science was formally presented by The Buhl Foundation's Director, Charles F. Lewis, on behalf of its Board of Managers, to the city of Pittsburgh, as represented by Mayor Cornelius D. Scully.

The Buhl Planetarium, being the latest constructed, has profited, both mechanically and architecturally, by the experience of all similar institutions in the United States and abroad. In addition to the planetarium proper, the building houses an institute of popular science, in which is demonstrated, by operating models, the progress of science in many fields. There is also a lecture hall seating 250 persons.

The planetarium auditorium seats 450 persons for the "theater of the stars" demonstrations. Here a $134,000 machine reproduces the heavens on the inside of a great stainless steel dome. This complex and versatile projector can show the stars and planets as they actually appear from any point on the surface of the globe—or at any given time in the past or the future. It can speed up celestial time to send the universe wheeling through a year's cycle in a few minutes; it can bring evening, midnight, or dawn; it can demonstrate eclipses of the sun and moon at the will of the lecturer who controls its operation from the speaker's control panel. In addition, there will be a large telescope, placed in a roof observatory, which will enable visitors to view the wonders of the firmament directly.

The Planetarium and Institute of Popular Science, a gift to the city, will be managed by a board representing both The Buhl Foundation and the city government. The Foundation will assume financial responsibility for the operation and maintenance of the building over a period of years. In the past ten years The Buhl Foundation has made philanthropic grants totaling more than $3,000,000, and in addition has built Chatham Village* at a cost of $1,700,000, as a social and economic demonstration of the investment soundness of large-scale housing.

* See THE AMERICAN CITY for July, 1931, p. 115; February, 1932, p. 125; September, 1935, p. 81; and August, 1936, p. 85.

The Buhl Planetarium and Institute of Popular Science, Pittsburgh, Pa.

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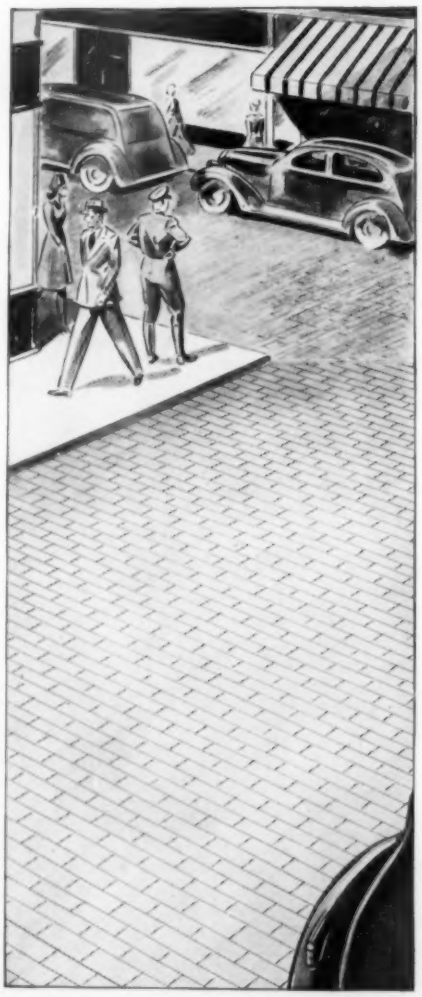

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Traffic Control and Facilitation

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Putting City Traffic in Grooves

By Carl V. Bergstrom

Director, Milwaukee County-Wide Traffic Survey

THE most general and basic type of traffic island is the one that divides traffic along the center line of the roadway or along traffic-lane lines in the direction of the flow of traffic.

The dead area island covers areas within the intersection that should not be used by channelized traffic. It also has a pedestrian function in that it is usually located at mid-intersection where the pedestrian is dodging traffic. This type of island is usually a good location for traffic signals and street-lighting facilities.

The by-pass island allows right turns outside the intersection proper by the creation of a right-turn lane between the island and the intersection curb radius. This island installed at an intersection reduces the area of conflicting traffic moves to a minimum and allows the installation of traffic signals on the island itself.

The mass-carrier loading island allows a point of vantage within the intersection for pedestrians getting on and off street cars and buses. It is placed in the roadway in such position as to divide the outer or mass-carrier lane of traffic from the inner or motor-vehicle lane of traffic. This island should be long enough to allow the unloading of two street cars at one time. For additional mass visibility, the island should be equipped with an identifying target sign at least 18 inches wide by 3½ feet high. Night illumination of all the islands mentioned thus far is very important and is taken up in detail later.

The idea of a continuous narrow center island between intersections is coming into favor. Where these strips are continuous through the length of the street, the very continuity will provide ample longitudinal visibility for the motorist.

Raised safety islands for intersection purposes are usually made of continuous concrete construction with expansion joints. On asphalt the topping is removed and the island is poured on the concrete base. On a concrete roadway the island is installed on top of the present surface. Usually the part of the road to be in contact with the island is given a coating of bituminous material as a bond and seal against frost. When an island is constructed as part of a new roadway, it is usually poured as part of the roadway base.

Target signs are the means of giving a raised traffic island added visual mass above its 5 inches of height above the pavement. Long islands should have signs at either end, especially if there is need for a special traffic message at these points, such as, "Keep to the right" or "No left turn." The target signs should be considered as part of the island itself, and no island should be allowed to go into service without this additional means of identification.

Illumination

Many channelization and island installations are failures because of improper night identification. Such traffic islands become hazards at night. Milwaukee has been a pioneer in what is known as spot illumination on the roadway. The first development along this line was the center-of-the-intersection mushroom light. When raised traffic islands were first built, it was a logical move to place these mushroom lights on the islands to afford the same kind of roadway identification at night as in the case of the mushroom light. These marker lights, as they are now called, indicate the physical shape of the island by the spot illumination. The marker itself is a minimum hazard to vehicular traffic. Amber lenses are used because this color signifies caution. One of the large manufacturers of floodlighting equipment produces an airport base light for runways which can be used without modification for island illumination. This assembly projects only 2 inches above the pavement level, but affords adequate spot illumination. It is constructed so that a vehicle can drive over it without damage.

It is recommended that further use of the marker light source be made for floodlighting the target signs mounted on the island. This can be accomplished by using a spread light optical lens in the marker opening facing the traffic sign.

A final means of illumination for traffic islands is by the use of reflector buttons facing the headlights of the approaching vehicles. Instead of installing the reflector buttons in a separate unit, they should be incorporated as part of the target signs to outline the message or symbol of the sign. The warning signal then is the complete outline of the target sign with the added feature of reflection of the message on the sign.

The island should be bordered by a 6-inch traffic line on the pavement. Wherever islands are installed at intersections, they should be supported by the proper crosswalk and lane lines. Crosswalk lines should not be less than 8 feet or more than 10 feet between centers. Traffic lane lines should be composed of 7-foot lines separated by 7-foot spaces.

Electrical service to the island is obtained either through underground conduits or through pipes. In either method the future electrical needs should be anticipated, such as for traffic signals or a street-lighting standard. The locations for the markers on the island are usually poured as part of the construction of the island.

Intersection Design

The off-set intersection was originally created by roads laid out along township or section lines which did not coincide at certain points. For the sake of this discussion, we may assume that it is possible to acquire the necessary private property to give the off-set street a new alignment. The important point to remember in re-designing intersections is to work from the center line of the street toward the curbs. That is, the first operation should be the establishment of the new center lines of the intersection. In the case of the off-set intersection, the new center line should start at a point far enough back to allow a smooth

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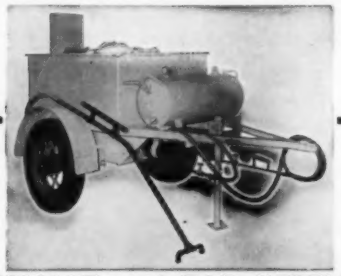

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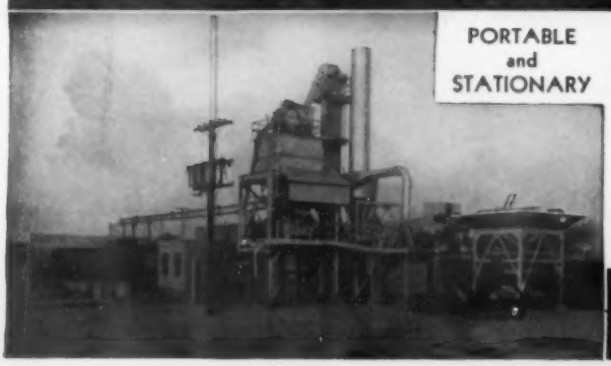

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ENGINEERS AND MANUFACTURERS

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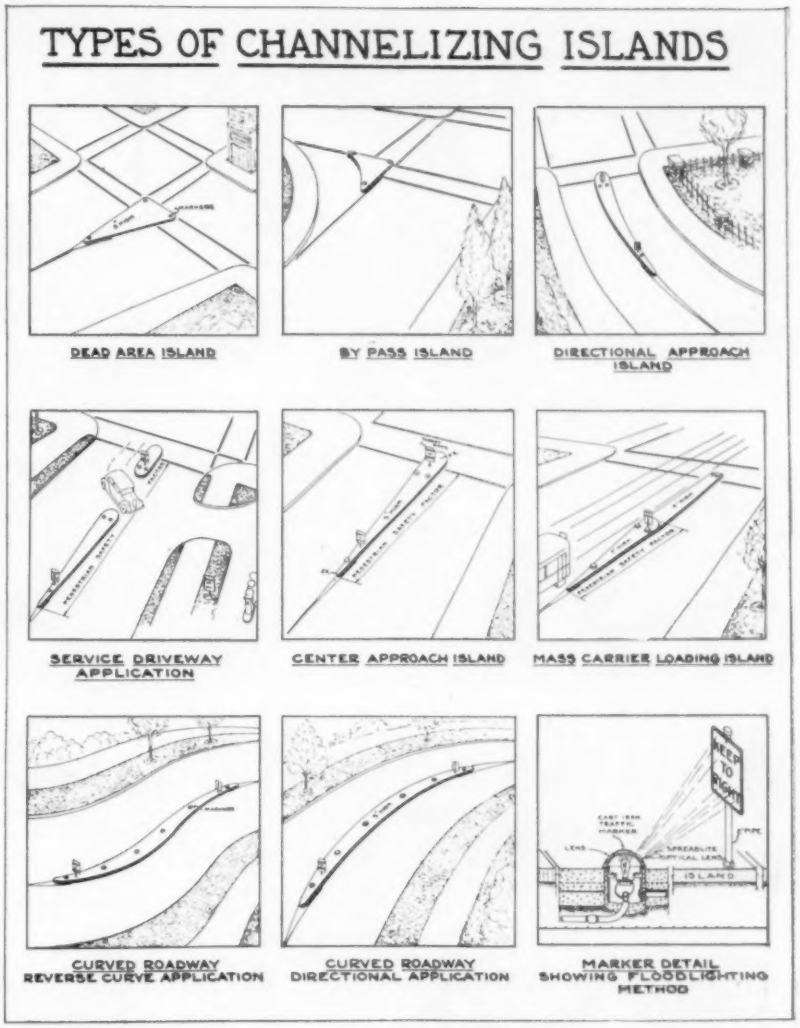
continuity of a curved center line tangent to a like arrangement in the opposite street approach. The next step should be the establishment of the amount of lateral space to be allowed for the center island. The remaining roadway area should be allotted strictly according to traffic lanes with a maximum of 10 feet and a minimum of 9 feet per lane. The layout at this stage will determine the new curb line and the sidewalk area. The sidewalk width may be cut down to a minimum of 8 feet. This new curb and sidewalk arrangement will determine the amount of private property necessary to acquire. The center-island design will be based on the new roadway center line and should be extended back from the intersection far enough to give smooth continuity to the new intersection alignment. When the design has reached this stage, it should be given the *driver vision test*. The layout should be viewed by looking along the edge of the drawing in approximately the same position in which the approaching motorist would see the finished installation. In almost every case there will have to be adjustment in moving the opposite roadway approach several feet laterally to offset the optical illusion of its not lining up. This adjustment on paper is important and will eliminate what may look like a bull in the design if installed.

In order to make channelization at readjusted intersections as efficient as possible, curb-parking arrangements should be given careful consideration. It is entirely reasonable that parking should be eliminated for a distance back from the intersection as far as is deemed necessary to allow the intersection to operate at its maximum efficiency. This will enable more lanes of traffic to be operative at and near the intersection. Where used, the parking lane should be marked by means of pavement lines. Where traffice lanes have been established as a result of channelization, they should be clearly identified by the standard arrangement of 7-foot pavement lines separated by 7-foot gaps.



Traffic islands properly located, marked and illuminated improve traffic flow and protect pedestrians

It Pays to Modernize

The adjustment of city streets and intersections to present traffic needs is too often limited by the conflict between the static property lines and the public street width. Many times acquisition of several feet of private property for a short stretch will allow a physical traffic hazard to be permanently removed from an intersection. A way to acquire this property at reasonable cost must be sought. It is suggested here for thought that intersection improvements be put on the books as real value. If a city improves an intersection and thereby expedites traffic movement, it can be assumed that the real-estate values at the intersection have been enhanced *especially if the improvements are backed up with better street lighting*, crosswalk lines and modern traffic islands. Retail business at the intersection, including drugstores, filling stations and restaurants, ought to realize additional business good-will as a result. Assessments made on the basis of the value of this good-will, in many cases, can offset the costs of acquiring necessary private property.

Another type of traffic improvement requiring the acquisition of private property is the installation of a corner by-pass island at a right-angle intersection. For example, where a drugstore has been built out to the property lines, it would be impossible to create a by-pass island at this point which would allow continuous right turns without cutting through the corner of the drugstore itself. The design on paper would indicate the amount of the drug store which would have to be sacrificed for the by-pass roadway and the new sidewalk. A solution is suggested whereby the municipality in return for the property necessary for the improvement would re-build the store front along modern lines and conforming to the contour of the new sidewalk line. This new store front would give the drugstore increased window visibility at the small expense of floor area which was probably formerly occupied by the entrance. The second story of the building can be supported by cantilever construction and a vertical support at the sidewalk's edge. The modernization of this intersection, together with the better appearance of the store, should outweigh the loss of floor space.

Traffic improvements made through the installation of islands and other channelization aids should be carefully related to the master traffic plan of the city.

MORE HARLEY-DAVIDSONS FOR AKRON'S POLICE

ANOTHER 100% HARLEY-DAVIDSON CITY

✓CHECK THIS EXCLUSIVE FEATURE

Again Harley-Davidson pioneers by making sensational new 5.00x16 tires available on all 1940 models — for greatly increased riding comfort — greater traction — longer wear — sturdy appearance—and many other superior advantages.

SEVEN new Harley-Davidson Police Motorcycles, recently delivered, bring Akron's total to 20, including one Harley-Davidson Servi-Car for special duty. Akron — city of efficient tires — demands utmost efficiency in motorcycles for its police — chooses Harley-Davidsons 100%.

From coast to coast, cities large and small recognize the dependability, power, flexibility, and outstanding economy of maintenance and operation provided by Harley-Davidsons. That more than 3,500 Departments the country over have purchased Harley-Davidson Police Motorcycles is ample proof of continued superior performance. Ask your dealer to bring over a new 1940 model for your inspection.

HARLEY-DAVIDSON MOTOR COMPANY
MILWAUKEE, WISCONSIN, U. S. A.

HARLEY-DAVIDSON
THE POLICE MOTORCYCLE

Municipal Law Notes and Decisions

Prepared by National Institute of Municipal Law Officers, Washington, D. C.

John A. McIntire and Charles S. Rhyne, Legal Counsel

Automobile Inspection Ordinances

As a means toward greater public safety and the protection of the public from the hazard of automobile accidents, there has been a noticeable movement in states and municipalities toward the adoption of compulsory automobile inspection laws. These ordinances are adopted as an exercise of the municipality's power to control traffic and regulate the streets. The first case to test such an ordinance found it valid on this basis. *City of Evanston* v. *Wazau*, 364 Ill. 198 (1936). In 1938 the compulsory inspection ordinance of the city of Cincinnati was upheld by the Supreme Court of Ohio, and the United States Supreme Court denied certiorari. *Mayer* v. *Ames*, 133 Ohio St. 458 (1938). Cert. den. 6 L. Wk. 145 (U. S. 1938) These ordinances in order to withstand attack, even though passed pursuant to an admitted power to regulate the streets, must (1) not conflict with general state law; (2) not provide for a license fee so in excess of the cost of regulation or inspection as to amount to a revenue measure; (3) not involve the delegation of an unguided discretion to the inspection officials regarding the standards of safety required. See note (1937) Geo. Wash. L. Rev. 262.

The most recent case on this subject has invalidated the ordinance of Oklahoma City because that ordinance is held to conflict with state law. *Martin* v. *Rowlett*, 93 P. (2d) 1090 (Okla. 1939). The Supreme Court of Oklahoma holds that under a state statute prohibiting ordinances exacting a license for the use of public highways or excluding any motor vehicle from the free use of public highways, the compulsory inspection of vehicles within the city as a condition to the right to use the city streets was an act beyond the city's power.

Quasi-contractual Liability of Cities

Quasi-contractual liability of cities has received considerable attention in several recent cases. The general rule on this subject is clearly stated that if a city lacks express or implied power to contract for specific goods or services, no action can be maintained against such city for such goods or services furnished to it even on a quasi-contractual theory of unjust enrichment. More difficulty is encountered in a situation where the municipality has power to enter into the contract in question but has failed to comply with required procedure in the method of contracting. In this situation also is may generally be stated that procedural limitations have the effect of substantive limitaticns on municipal powers. A distinction, however, is taken between mandatory and directory procedure. While failure to comply with mandatory procedure leaves the contracting party without remedy on the contract or in quasi, failure to satisfy a merely directory requirement will not affect the validity of the contract. See *Federal Paving Corporation* v. *City of Wauwatosa*, 286 S. W. 546 (Wis. 1939). In this case a paving contract with the city was held invalid because of the failure of the city to comply with the mandatory requirements of publication of advertisements for bids as the basis for letting a contract. See also *Hamer* v. *City of Huntington*, 21 N. E. (2d) 407 (Ind. 1939). Unusual in its treatment of this subject is the case decided last year of *American La-France, Inc.* v. *City of Philadelphia*, 184 So. 620 (Miss. 1938), noted (1939), 16 N. Y. U. L. Q. Rev. 494.

Two other recent cases have held that no claim for compensation may be made on a basis of implied contract where an express contract governs the relations of the parties and the services rendered were governed by its terms. *Ralph B. Slippy Engineering Corporation* v. *City of Grinnell*, 286 N. W. 508 (Iowa 1939); *Bronx Asphalt Corporation* v. *City of New York*, 13 N. Y. S. (2d) 197 (City Court of New York, Bronx County, 1939). The New York case, however, also expresses the proposition that where the city has received the benefit of services rendered by the plaintiff under the terms of the contract, it may not enrich itself through misrepresentations, authorized or unauthorized. The city was bound by representations made to the contractor by the Chief of the Bureau of Audit and the disbursing clerk in the Comptroller's office concerning the effect of a reservation contained in the release executed at the time of the receipt of a warrant for less than the amount claimed.

Extra compensation claimed on the basis of an implied contract was also denied in the case of *Willis Bancroft, Inc.* v. *Millcreek Tp.*, 6 A. (2d) 916 (Penna. 1939).

Administrative Law—Delegation

Under the Civil Service law the Commissioner of Parks of New York City can delegate the power to hear charges against employees of the Department as the basis for removal. This authority to delegate does not carry with it the authority to delegate the power of removal itself, for, although a subordinate may hear the charges, the Commissioner of Parks, himself, must order the removal. *Morrison* v. *Moses*, 14 N. Y. S. (2d) 67 (Sup. Ct. N. Y. County 1939).

Business Licenses—Florist

While a municipality has power to regulate private business in the public interest, an ordinance of the city of Detroit prohibiting the sale of cut flowers and potted plants, except under license from the mayor, was invalid in the absence of showing of any evil requiring regulation of the business. Testimony shows that the true purpose of the ordinance was restriction of competition for the benefit of members of the Florists' Association, rather than the protection of the public. *S. S. Kresge Co.* v. *Couzens*, 287 N. W. 427 (Mich. 1939).

Civil Service—Contract Rather Than Appointment

Although the civil service laws cannot be evaded by a contract for employment rather than appointment under the civil service laws, the contract between a physician and the Board of Transportation of the city of New York retaining the physician's services for treatment of injured employees, etc., was properly treated as an agreement with an independent contractor so that the physician does not come within the classification as an employee under the civil service laws. *Turel* v. *Delaney*, 14 N. Y. S. (2d) 57 (Sup. Ct. N. Y. County, 1939).

Civil Service—State or Local Agency

A municipal board of health, although organized under the charter of the city of Akron, is nevertheless a state agency as the result of applicable state laws, so that municipal civil service legislation will not apply to positions on the board but such positions will be governed by the state civil service law. *State ex rel Mowrer* v. *Underwood*, 22 N. E. (2d) 424 (Ct. App. Ohio 1939).

Garbage Collection

An ordinance of the city of Canton, Ohio, providing that no person other than the duly authorized employees of the city shall collect garbage, does not take property without due process of law and is not in conflict with the general laws of the state. *City of Canton* v. *Van Voorhis*, 22 N. E. (2d) 651 (Ohio App. 1939).

Home Rule—Local Civil Service Regulations and Court Positions

Civil service sections of the charter of the city of Akron cannot be applied to bailiffs, clerks, and other employees of the Municipal Court, since these positions are provided for by act of the Legislature and are not matters of home rule but of general state concern since the power to create courts is exclusively conferred upon the State Legislature. *Underwood* v. *Isham*, 22 N. E. (2d) 468 (Ohio App. 1939).

Quo Warranto—Certiorari

Where the respondent and not the prosecutor was in possession of the office de facto, at least under color of legal right, quo warranto and not certiorari is the proper action to try title to the office. *Di Mona* v. *Mariano*, 8 A. (2d) 97 (Sup. Ct. N. J. 1939).

Quo Warranto—Petition for Order to Show Cause

Where the petitioner claimed that by application of the civil service law he was entitled to a municipal office rather than another appointee, quo warranto is the proper action to decide the question and not a petition to the Supreme Court for an order to show cause why the unsatisfactory appointment should not be set aside. *Chapman* v. *Frobisher*, 8 A. (2d) 76 (Sup. Ct. N. J. 1939).

Sidewalks—Prohibition of "Pullers-In"

The provision of the New York City Administrative Code making it unlawful for anyone to stand or to cause or permit anyone to stand on the sidewalk in front of, or in the entrance of, any store for the purpose of calling attention to merchandise, is valid and was violated by a person who put up a table in a vestibule covered with gloves so situated that purchasers must stand on the sidewalk in front of the store. *People* v. *Patrick*, 14 N. Y. S. (2d) 249 (City Magistrate's Ct. N. Y. C., Boro. of Manhattan, 1939).

State—City Relations—License of Employees

An ordinance of Sacramento requiring registration and licensing of journeymen plumbers cannot be applied to a civil service employee of the state doing work within the city on a state project, since the qualifications and regulations of state employees is not a municipal affair. *Ex parte Means*, 93 P. (2d) 105 (Cal. 1939).

Taxation—Local Gas Tax in Conflict with State Law

Where the state itself has preempted the field of taxing gasoline, a city ordinance imposing graduated license taxes on gasoline stations having storage capacity for stated quantities of gasoline was void as a tax on the gasoline itself, and therefore in violation of the State Motor Fuel Tax Law. *Southern Oil Stores, Inc.* v. *City of Macon*, 4 S. E. (2d) 243 (Ga. 1939).

Torts—Liability of Officers

A city attorney who acts within the scope of his employment in prosecuting an individual for violation of a local ordinance is not personally liable for malicious prosecution. *Norton* v. *Hoffman*, 93 P. (2d) 250 (Cal. App. 1939).

Troy Relights to Make Night Traffic SAFE

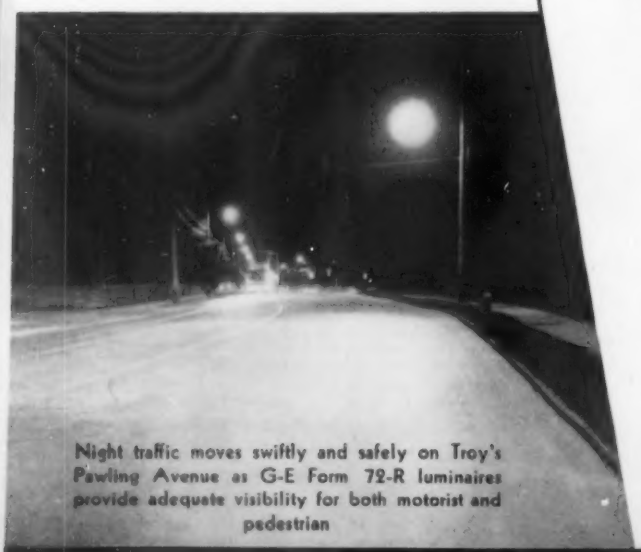
Barnet Steiner, Street Lighting Engineer, and Frank J. Hogan, Mayor, Troy, New York

Troy knows what better street lighting can do. Since 1937, when more than 800 G-E luminaires were installed on 14 arterial streets, night accidents in the City have been reduced more than 20 per cent.

"There is no doubt in my mind that our new street lighting equipment should be given much credit for this remarkable night accident reduction," writes Mayor Frank J. Hogan.

So the City of Troy, New York, adds its name to the ever-increasing list of cities that are saving lives and reducing property damage by relighting arterial streets. Syracuse has reduced accidents by 38 per cent. In Los Angeles at 25 important intersections night accidents dropped 84 per cent. More than 50,000 new G-E luminaires installed from coast to coast have proved that safety records like these are typical.

Saving lives isn't expensive. Why shouldn't your city profit by what these other cities have proved—that a planned street-lighting program is the most economical way to save lives and protect property. A G-E lighting expert will be glad to study your accident situation and make recommendations without obligation. Call the nearest G-E office, or write General Electric, Schenectady, N. Y.



Night traffic moves swiftly and safely on Troy's Pawling Avenue as G-E Form 72-R luminaires provide adequate visibility for both motorist and pedestrian

FRANK J HOGAN
Mayor
JAMES W BLAKE
Secretary

MAYOR'S OFFICE
TROY N Y

September 19, 1939

Mr. F. D. Crowther,
General Electric Co.
No. 1 River Road
Schenectady, N. Y.

My dear Mr. Crowther:

You will probably be interested to hear about the latest victory in our war against darkness and night traffic accidents.

Accurate figures kept by our Police Department show that night fatalities have decreased by 20% during the last year, and day fatalities have decreased by 6.8%. There is no doubt in my mind but that our new street-lighting equipment should be given much credit for this remarkable night accident reduction.

Yours very truly,

Frank J. Hogan

MAYOR

FJH/JWB

GENERAL ELECTRIC

500-348

Outdoor Lighting

Streets—Highways—Floodlighting

Order Tomorrow's Street Lights Today

By M. H. Frank
Vice-President,
Wisconsin Power and Light Co.,
Madison, Wis.

CITY and village officials have saved many lives and reduced pain and suffering by increasing the safety and attractiveness of our streets and highways at night. The value of this work is recognized by such independent outstanding groups as

The American City Magazine
American Road Builders' Association
Elks Clubs of America
The Travelers Association
United States Junior Chamber of Commerce

We believe that none of the above organizations has a selfish interest in this movement, but on the other hand all are inspired to make our cities, villages, and states safer and more pleasant places in which to live 24 hours a day every day in the year.

The reduction of serious accidents for the year 1938 over 1937 was tremendous, and the indications are that 1939 is going to show a big improvement over 1938. With the continued wise action of city officials, even greater reduction of loss of life and of pain and suffering will be brought about in the immediate future.

The question therefore is really one of making our streets and highways more attractive and safer by night. In planning to relight your town, consider the advantages of:

1. Investing money for lighting streets and highways
2. Using enough lighting to produce results
3. Selecting modern lighting fixtures
4. An attractive city or highway for night travel
5. Protection to the public through better street and highway lighting
6. Making the state a more pleasant and attractive place in which to live and entertain tourist guests, with safer traveling at night

Our streets and highways are just as attractive at night as in the daytime if we provide safe visibility.

In a few short years, this condition has been generally recognized as being intolerable

The normal candlepower of the sun at mid-day during the summer months is 10,000 on the earth's surface. I asked our engineers to estimate the amount of energy necessary to provide this intensity for all the streets in Wausau, Wis., at night. The figure is 25,000,000 horsepower, while the total generator capacity of all prime movers in Wisconsin on December 31, 1938, was only 1,154,000 kilowatts. The code for street lighting as revised in 1935 by the Illuminating Engineering Society recommends from 1/5 average lumen or candlepower per square foot between curbs to 3½ average lumens or candlepower per square foot, depending on the density of traffic and class of street. This would require from 5 to 25 kw per mile, a trifling amount of energy compared to the maximum amount for summer noon condition.

The big problem of course, is *safe visibility*. Engineers, research laboratories, lamp manufacturers, automobile engineers, and highway engineers are all working to solve the problem of safe visibility on streets and highways at night. Here are the more important of these activities:

1. Highway engineers are working with illuminating engineers to design the streets and highways with a top surfacing that will reflect light rather than absorb it. Consideration is being given to different types of material to provide center markers and lane markers taking advantage of a different top dressing or a different colored material; something that will stand out prominently under any lighting. This plan involves different materials and the treatment of materials so that they will reflect the light from street lights as well as from headlights of vehicles. Needless to say, this plan will make overhead lighting more effective.

2. Research engineers are developing ways and means of providing

BALTIMORE Gets 2 Services from 1 Standard

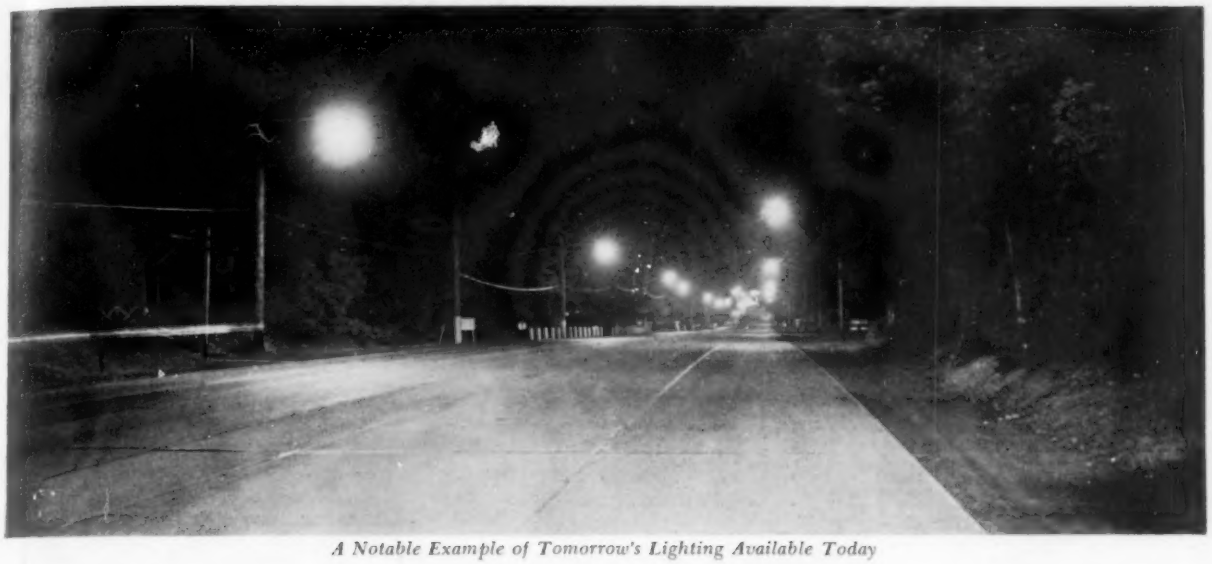
THE City of Baltimore profited two ways when they specified Union Metal *Steel* Standards for this Howard Street installation. First, they obtained mountings which meet every practical and scientific requirement for modern street lighting. Second, because of the great strength of these steel standards they serve to support the trackless trolley overhead.

The economy of making one standard do double duty is apparent. What's more, the curb line is cleaned up and the general appearance of the street improved by using combination standards of a single, trim and attractive design.

Union Metal offers a complete line of *steel* lighting standards which can be readily adapted to carry any combination of services. Let our engineers show you how your city can both light up and dress up its streets at a saving.

UNION METAL

THE UNION METAL MANUFACTURING CO. CANTON, OHIO



A Notable Example of Tomorrow's Lighting Available Today

higher intensity and better distribution of overhead lighting more efficiently. Special consideration is being given to the treatment of heavily traveled through streets and highways where modern luminaires with large lamps and close spacing are necessary.

3. One of the most important developments is the special lighting for dangerous intersections or dangerous spots on important streets or highways. The most acceptable method of marking such spots seems to be the sodium light, because of its yellowish color and high intensity. Some cities have adopted this method of marking their dangerous intersections so that the traveler will be warned in advance of the approach to a dangerous intersection or hazardous place in the street.

4. Lighting engineers and automobile manufacturers are improving vehicle lights. Ample light can be economically provided to show not only the highway, but also the outline of unlighted dangerous objects and places—and to do this with a minimum of glare or reflection into the eyes of motorists and pedestrians. The most important features of this research involve:

a. Increased light on street
b. Increased object brightness
c. Reduction of glare
d. Increased relative visibility

Modern Bulbs and Fixtures

Probably the most recent bulb development is the bipost hard-glass bulb, the advantages of which are described as follows:

a. The bipost construction is particularly advantageous in the larger lamps. The hard-glass bulb eliminates water breakage. The grid above the filament collects the evaporated tungsten particles, thus limiting blackening of the bulb. The bipost socket may be so oriented that the lamp filament will always be perpendicular to the curb or in whatever other position produces the largest amount and best distribution of light on any particular street. The average gain in effective illumination by such orientation is of the order of 5 per cent.

b. The Silvray treatment of bulbs is a comparatively recent development and is being used quite widely. It is simply a silver plating on the standard lighting bulb. It has the advantage of furnishing a brand-new reflector with every new bulb.

c. The sodium unit is one of the more recent developments, and here are some testimonials for it:

The county of Los Angeles and the city of Chicago are using sodium luminaires extensively for lighting intersections and crosswalks. The county of Los Angeles has made several hundred installations.

Leslie J. Sorenson, Traffic Engineer of Chicago, compiled the following facts with reference to sodium lighting at intersections.

1. Pedestrians are in less danger, because they are either strongly illuminated or silhouetted at the crosswalks.

2. Similarly, the officer directing traffic is more easily seen. A statement from one of the officers at an intersection lighted with sodium is as follows: "Under the *old* lighting I could shout, blow my whistle, and wave my arms, yet motorists would seemingly try to run me down."

3. Vehicles halted in the middle of an intersection by left turns or traffic signals are more readily visible and collisions are less likely to occur.

4. Color is a factor. If the use of sodium lights becomes common for dangerous crossings, then motorists will identify them with this use, and will be warned of a hazardous condition in advance.

d. *Fixtures.*—Many new fixtures have been developed during the past few years. Indeed, the manufacturers have been doing a fine job in keeping up to date in developing new modern efficient lighting fixtures.

Twenty-three states have actually started definite programs of lighting highways, and in March, 1939, a check-up indicated that over 380 miles have already been electrified. The maximum mileage in any one state is in New Jersey with about 200 miles. Generally speaking, this lighting is in zones of heavy traffic or sections of the highways where there are special hazards for night travel. Reports indicate that practically all installations have been very satisfactory, and plans are under way for extensions.

What the Public Thinks

a. Edgar J. Buttenheim, publisher of THE AMERICAN CITY, in a letter to Ward Harrison, Nela Park Engineering Department, says:

Every municipality should, we believe, have a comprehensive street-lighting plan. This plan consists of a carefully studied layout in which all streets are classified in accordance with their lighting requirements, and the adoption for each street classification of a standardized lighting system conforming to the Illuminating Engineering Society's Code of Street Lighting.

b. Earl Reeder, Chief Traffic Engineer, National Safety Council, in an address before the Joliet Rotary Club said:

On the basis of exposure in terms of the number of vehicles and pedestrians on the streets and highways, traffic accidents occur much more frequently at night than in the daytime. Two-thirds of the traffic fatalities occur between sunset and sunrise, when normal daylight does not exist, although less than one-third of the traffic is moving during these hours.

c. The United States Junior Chamber of Commerce is putting on a national campaign, "Safety with Light."

d. The American Road Builders' Association has issued valuable publicity on highway lighting.

e. R. E. Simpson, consulting illuminating engineer, West Hartford, Conn., makes the following statement

WESTINGHOUSE LIGHTS CLEVELAND'S "Bridge of Tomorrow"

Night view of Cleveland's new Main Avenue Bridge, and close-up of smart, modern daylight appearance of the Sodium Luminaires.

SODIUM UNITS LIGHT NEW SPAN

Hailed by engineers and government officials as "The Bridge of Tomorrow," Cleveland's new mile-long Main Avenue Bridge, a free-way for traffic to the city's west side, was dedicated October 6th.

The general public, engineers and press acclaim the Westinghouse Sodium Luminaires lighting this span as a distinct contribution to Cleveland's record as the nation's safest large city. One hundred and thirty-nine units of the sodium butterfly type were installed by the H. L. Martien Electric Company. The units are mounted at 100-foot intervals on 24-foot steel standards to provide ultramodern TRAFFIC SAFETY LIGHTING. The bridge underpasses are lighted with Westinghouse Reflectolux Jr. units.

Services of Westinghouse engineers are available to all municipalities to solve unusual street, highway and bridge lighting problems. Call your local Westinghouse office, or write Westinghouse Electric & Mfg. Co., Lighting Division, Edgewater Park, Cleveland, O.

Westinghouse Lighting Equipment

with regard to Hartford's record of 46 per cent fewer accidents on relighted streets:

Mr. Citizen has the choice, or the choice is made for him by the city officials, of paying the bill for good street lighting and enjoying the accompanying comfort, convenience and safety, or paying a smaller bill for poor street lighting plus a larger one to cover the cost of excess night accidents. In either case it is the citizen who pays the bill.

Statistics of the Wisconsin Highway Commission indicate that in 1938, out of a total of 556 fatal accidents, 340 or 61 per cent occurred at night. For the year 1939 to August 1, out of a total of 281 fatal accidents, 166 were at night. In other words, about 60 per cent of the fatal accidents in Wisconsin occur at night, when travel is at the minimum.

It is estimated that with adequate street and highway lighting — code lighting at points of heavy traffic and dangerous intersections — night accidents could be reduced by one-third. Is there any better time to start than today?

—A talk before the Mayors' and Aldermen's Section of the League of Wisconsin Municipalities Convention at Wausau on September 14, 1939.

Lighted Arteries Through Austin

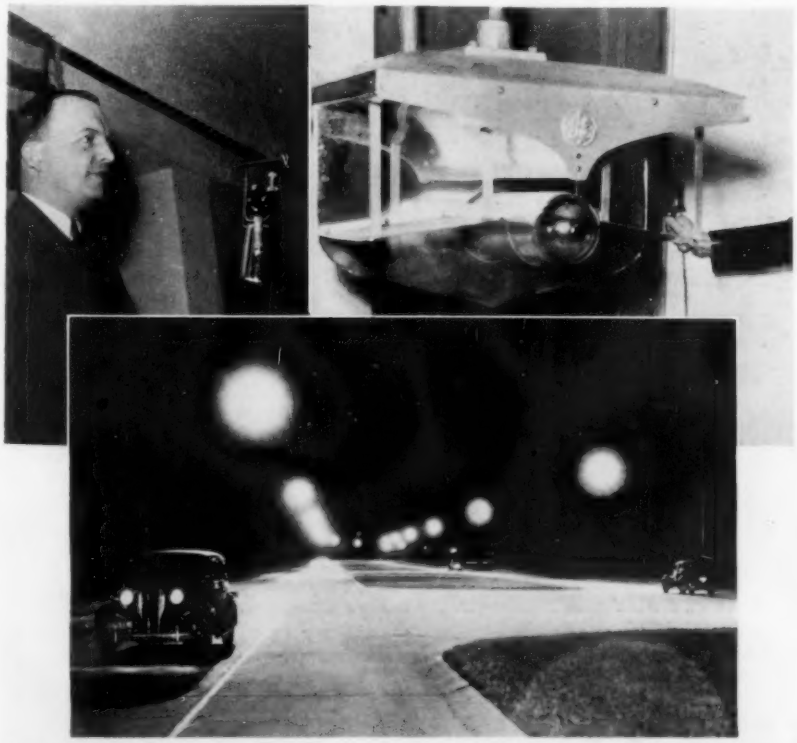
By GEORGE L. BROWN
City Engineer, Austin, Minn.

THE city of Austin and the Minnesota Highway Department shared the cost and the satisfaction of lighting U. S. 16 and 218, to provide a new belt line through the city.

On 2.03 miles of U. S. 16 from River Street to the easterly city limits, 53 sodium-vapor and 29 incandescent units were installed. On U. S. 218, from its junction with U. S. 16 for 0.44-mile to the south city limits, 4 sodium-vapor and 14 incandescent units were installed.

The luminaires of the sodium-vapor and incandescent units designed by General Electric engineers are installed 25 feet above the pavement. The incandescent units are spaced approximately 125 feet apart, or five times the mounting height. The sodium-vapor units are spaced approximately 200 feet apart, an 8 to 1 ratio. On U. S. 16, where there is a 40-foot center boulevard, each roadway was considered a separate lighting problem in determining the spacing of the lights.

The lighting standards are Union Metal fluted steel shafts with cast-steel base, and 8- and 15-foot brackets were used. Each base has a 3x5-inch handhole. The sodium vapor units use 10,000-lumen, 115-volt lamps. The incandescent luminaires are equipped with Holophane refractors and 300-watt lamps. Multiple circuit was used on both sodium and incandescent systems, and all wiring is underground.



At upper left is Governor Harold R. Stassen of Minnesota; and at right the sodium-vapor luminaire used to light belt line through Austin, Minn., as shown below

COST OF PROJECT

A.	Cost of Lighting Units	
	LUMINAIRES	
1.	57 10,000-lumen, 115-volt sodium-vapor, complete for multiple-circuit operation. Unit price $73.70	$4,200.90
2.	43 refractor-type incandescent, including 300-watt lamp. Unit price $16.33	702.19
	STANDARDS	
3.	37 with 8-foot bracket. Unit price $51.12	1,891.44
4.	49 with 15-foot bracket Unit price $62.77	3,075.73
5.	8 with 8-foot bracket. Unit price $59.26	474.08
6.	6 with 8-foot bracket and adapter for bridge base. Unit price $79.03	474.18
	Total item A	$10,818.52
B.	Cost to Build 94 Foundations	1,975.95
C.	Cost to Erect Units	404.08
D.	Laying Cable and Wiring	
1.	Labor	1,952.65
2.	Compensation insurance	149.05
3.	Materials:	
a.	1 15-kva transformer @ $146.88	146.88
b.	2 10-kva transformers @ $111.52	233.04
c.	2 7½-kva transformers @ $82.48	164.96
d.	2 5-kva transformers @ $62.08	124.16
e.	12 cut-outs @ $6.80	81.60
f.	12 fuses @ $0.25	3.00
g.	12 lighting arrestors @ $5.20	62.40
h.	10 single-pole switches @ $15.84	158.40
i.	8 double-pole switches @ $28.53	228.24
j.	10 entrance heads	4.54
k.	100 feet 1½-inch conduit	15.03
l.	22 feet bare copper wire	283.87
m.	14,000 feet No. 6 Stranded Okosheath wire	895.44
n.	15,000 feet No. 8 Stranded Okosheath wire	783.90
	Total item D	$5,287.16
	Total cost of complete job	$18,485.71

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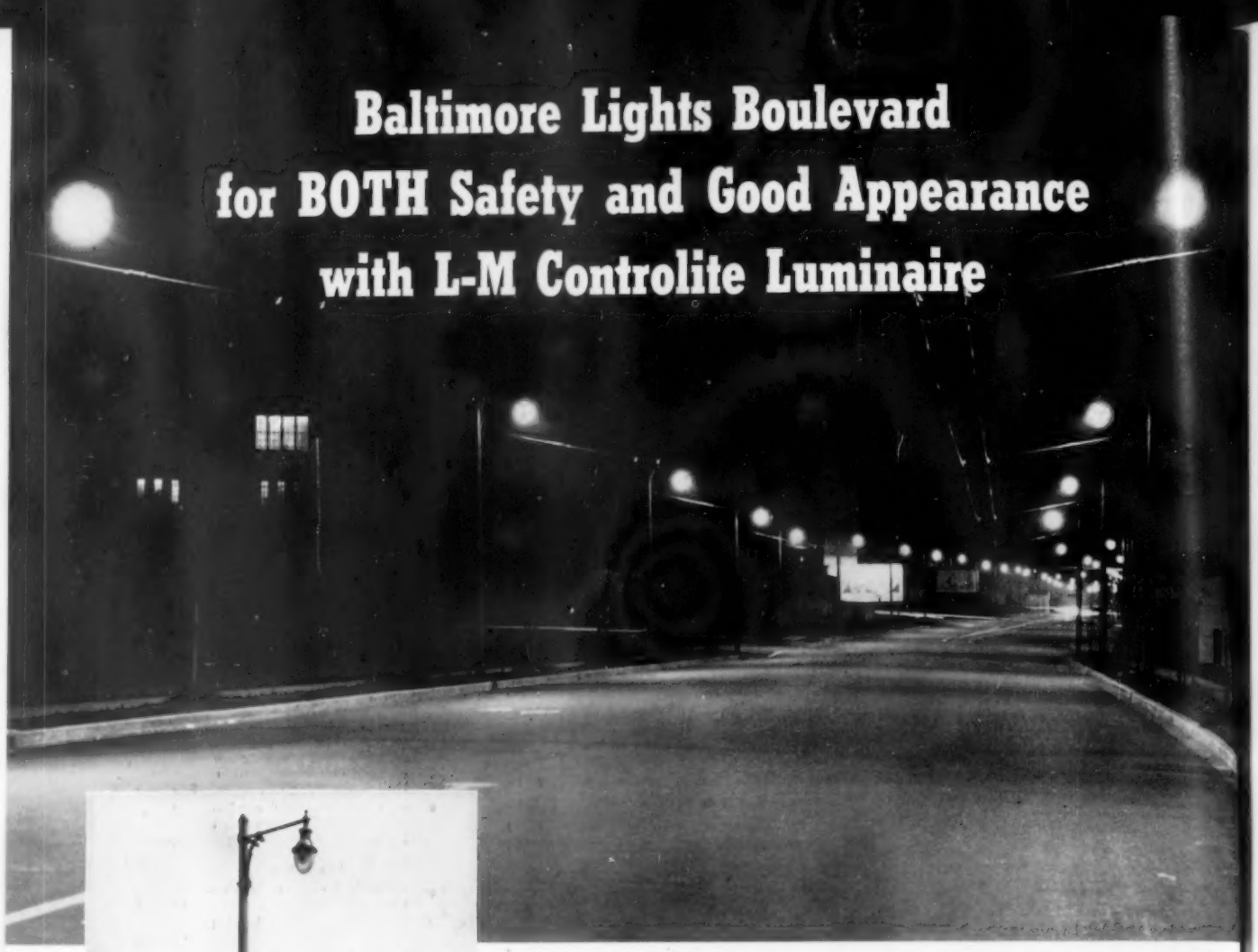

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Zoning and Planning Notes

With the cooperation of
EDWARD M. BASSETT
Author of "Zoning" and of "The Master Plan"

Zoning Ordinance—Board of Appeals—Variance—Validity of Ordinance

NEW YORK.—*Selleck v. Waterbury*, 13 N. Y. S., 2d, 591 (Appellate Division, July 7, 1939.—In this case an order was issued directing the petitioner Selleck to discontinue a certain building operation on the ground that it was in violation of the zoning ordinance of Pound Ridge, Westchester County. From this order Selleck appealed to the Board of Appeals of the town for a use variance. On certiorari this Court holds that the variance was properly denied because no notice of a public hearing was published, and no facts were submitted to the Board of Appeals upon which a use variance could be granted.

The referee who heard the case found that the zoning ordinance was void on the ground that it was arbitrary and unreasonable. With this conclusion the Court agrees. But this is immaterial at this time because the Board of Appeals had no power to pass upon the constitutionality of the ordinance. Therefore in this proceeding the Board of Appeals was right in refusing to stay the officer enforcing the ordinance.

EDITOR'S NOTE.—This case is given as an excellent illustration of a well-settled principle of zoning law.

Parking Meter Ordinance —Abutters

NEW YORK.—*Gilsey Buildings Inc. v. Incorporated Village of Great Neck Plaza*, 11 N. Y. S., 2d, 694 (Supreme Court, Nassau County, March 31, 1939).—The question for determination in this action is the constitutionality of a so-called parking meter ordinance in so far as it affects an abutting owner. The ordinance was authorized by an act of the State Legislature. The precise question does not appear to have been passed upon in the state of New York, although five municipalities in the state have adopted parking meter ordinances.

Whatever right of access an abutter has it is subordinate to the rights of the public at large and subject to reasonable regulation; and the Court holds that the regulation involved in this case is reasonable. The ordinance was adopted because of traffic conditions resulting from the parking of motor vehicles upon some of the highways in the business districts of the village, and its primary purpose is said to be to aid the public authorities without costly expense entailed in the employment of additional policemen to time the public in its parking; in short, to prevent overtime parking, and thus create a greater movement of traffic. The power of appropriate public authority over streets is not confined to their use for the sole purpose of travel, but they may be used for many other purposes.

The use here is a public one; and the ordinance is reasonable; it allows parking for an hour.

So far as plaintiff's right to park in front of its own premises is concerned, it is in no more favorable situation than any other member of the public at large; and the ordinance must be so defined as to allow the plaintiff, as well as his tenants and others doing business with them, to load and unload passengers or freight abutting its premises without payment of the parking meter fee.

Nor does the fact that a small fee is charged for parking, in aid of its regulation, render the ordinance void.

The Court cites the cases in other jurisdictions, stating that wherever the question has been raised in other jurisdictions the validity of the so-called parking meter ordinance has been sustained, except in Alabama.

EDITOR'S NOTE.—The Court cites a case in which an ordinance that forbade plaintiff from crossing the highway in front of its premises without first traveling a distance of one mile, was held to be reasonable.

For other cases on parking meters, see THE AMERICAN CITY for June, 1937, page 155, and September, 1939, page 115.

Planning Commission—Requirement of Two-Thirds Vote

OHIO.—*State ex rel. Bateman v. Zachritz*,* 135 Ohio State Reports, 580 (Supreme Court, June, 1939).—This is perhaps the most important city planning decision to date; for it upholds city planning and the city planning procedure which requires a two-thirds vote of the legislature body to overrule a disapproval by the planning commission.

A portion of Cincinnati known as California is located along the Ohio River, lies low and is therefore subject to floods. Adjoining it is one of the pumping stations of the Cincinnati water works. Excepting a few stores along and abutting the main highway, California is occupied exclusively for residential purposes, with a population of around 500 in the area reached by the unprecedented 1937 flood. It is not a thriving community, for 70 per cent of its territory is unoccupied, it is 25 per cent tax-delinquent and it has no street paving or lighting, sanitary or other sewers, or other customary urban utilities.

The plan of the army engineers for flood control and prevention in the Ohio River Basin included a levee at California continuing with a wall around the water works. The Federal statute provided that, as a condition of proceeding with flood-prevention works within a city, the city must give assurance to the Federal Government that it would furnish the lands or rights-of-way on which the flood-protection works would be located, and certain other financial obligations. The estimated cost of the Federal Government's construction was around $650,000, the city's contributions about $150,000.

So the army engineers, through the city manager, presented this California levee project to the City Council, and there was introduced a resolution containing the city's assurance of its part. This resolution was first submitted to the Planning Commission.

The Planning Commission disapproved the project, the main grounds, as stated in the Commission's report, being that floods were not the sole cause of the backwardness of California, and the city had ample cheap lands at higher levels for future residential needs, that it would be bad planning policy to preserve and promote the California portion of the river front for residential uses, and California should be gradually devoted to other types of uses which would not be seriously harmed by floods.

On the question of overruling the Commission's disapproval and passing the resolution for the proposed flood-protection works, the vote was 5 to 4, namely, a majority but not two-thirds. So the measure was declared defeated.

The city planning provisions of the city charter are similar to the model city planning act. They provided that after the planning commission had made a general city plan, "no public building, street, etc. . . . river front, harbor, etc. . . . shall be constructed or authorized to be constructed in the city until and unless the location thereof shall be approved by the commission, . . . provided that in the case of its failure to approve, . . . the council, by a vote of not less than two-thirds of its members, shall have the power to overrule such failure to approve, and thereupon the council . . . shall have power to act without such approval."

A California property owner and taxpayer brought an original action in mandamus in the Supreme Court of the state to compel the Chairman and Clerk of the Council to record the resolution as having passed. The Court unanimously decided that the resolution had not passed. The plaintiff's contentions and the rulings thereon may be briefly stated as follows:

(a) That the words "river front" do not include flood walls but are restricted to channel diversions or other changes in the location of the water. With practically no discussion, the Court held the words "river front" to include the flood levee,

* From *News Letter* of American Society of Planning Officials.

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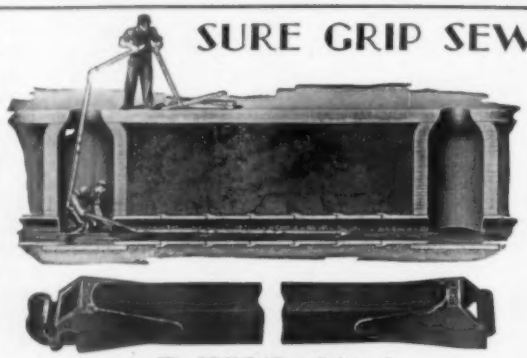

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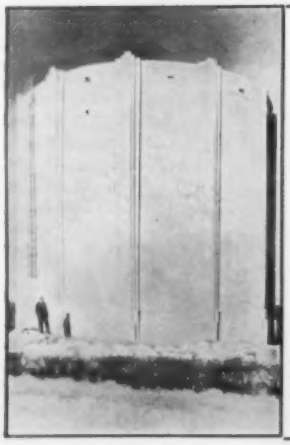

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and that, when constructed, the levee would become an integral part of the river front.

(b) The contention which the Court discussed at more length was that the powers of the planning commission did not cover Federal projects, such as flood protection which is to be constructed by the Federal Government. The same court had in an earlier case, *State v. Blakemore, Clerk*, 116 *Ohio State*, 650, held that the planning provisions in the city charter did not apply to a viaduct to be built and paid for by the state, though the consent of the city was required by the state statute —a decision which was cured by the State Legislature in a statute requiring state, county and all other public structures to be submitted to the city planning commission of the city in which same are to be located. The Court differentiated the present case from the previous one, in that, in the case of the California levee, the city was to expend moneys for rights-of-way, and changes in its streets and river front were involved.

(c) The contention was made that the two-thirds vote requirement constituted an unconstitutional delegation of legislative power. The Court stated that it could not see on what theory this could be claimed; that the Planning Commission's report was not merely a disapproval of a piece of legislation but of the levee plan itself, and that Council's power to adopt the resolution depends upon the provisions of the charter.

(d) Perhaps the most interesting contention made by the plaintiff was to the effect that the giving or withholding of flood protection at California was a question of "economic" policy, and that the Planning Commission's report did not deal with the "location" of the levee but with this question of policy. The Planning Commission's report expressly stated that it dealt with the question of locating flood-protection works on a particular portion of a 25-mile river front. The plaintiff's contention was, of course, erroneous, and the Court did not even mention it.

Gasoline Permit

PENNSYLVANIA.—*Gold v. Building Committee of Warren Borough*, 5 Atl. 367 (Supreme Court, April 10, 1939).—The plaintiff Gold is asking for mandamus to compel the issuance to him of a permit for the erection of a gasoline station. The zoning ordinance placing his lot in a restricted area had passed two of the readings required when his application for a permit was made, and the ordinance was passed on the day his mandamus proceedings were instituted and became effective the following day. He had made no improvements on the lot, or expenditures with relation to the matter.

Held that the refusal to issue the mandamus was proper. Whether mandamus shall issue is a matter for the exercise of sound discretion by the Court applied to; the writ is not one of absolute right. The Court properly exercised its discretion in refusing the mandamus.

EDITOR'S NOTE.—This decision would seem to be contrary to correct principle; see note to the New York case of *O'Neal v. Riverdale Park, Inc.*, in our Notes for May, 1939.

Yorkship Village in 1917 and 1939

(*Continued from page 43*)

the town plan. Like the early American towns, it has a central square and common. Its street plan is influenced by the boundaries of the site, which consist of the North and South Branches of Newtown Creek, the third boundary being the Mt. Ephriam Pike, leading into Camden.

The town plan provides for convenience of access to its business center, and to the bridge which was thrown across the Northern Branch of Newtown Creek, which affords convenient access to the yards of the Shipbuilding Corporation.

Space does not permit more than a few words relative to its buildings. The houses are built largely of brick, two stories in height, the majority having slate roofs. Great care was taken to avoid an institutional character for the development. Nine different types and colors of roofing were definitely located on the plans before construction was started. The houses vary from single and semi-detached, to groups of from three to eleven houses in a single group. Around the square there are also apartments three stories in height.

On the advice of the Federation of Labor, backyards were made of minimum size. They were enclosed by hedges, reinforced with chains suspended from concrete posts. Back of the yards were located playgrounds for the youngest children, while ample playgrounds and recreation space for adults and the older boys and girls was elsewhere provided.

It is now twenty years since the completion of the project. It is gratifying to its architect, on a recent visit, to find it completely occupied, and now considered one of the most desirable residence sections of the city of Camden. The rentals average from $5 to $6 per room, and the real-estate broker on Yorkship Square reports that if any of the four-room houses become vacant, they are immediately snapped up.

The town is, generally speaking, very well kept up, the only unsightly feature being the enclosures of porches with glass or fly screens, made by the tenants without benefit of expert advice. It is of particular note that though these buildings are semi-fireproof in construction, with wood beams and wood stud partitions, they continue in thoroughly usable condition.

City Manager Appointments

W. P. KANTO, City Manager of Apex, N. C., has been appointed City Manager of Norton, Va., to fill the vacancy created by Merrill D. Knight's resignation.

J. J. Rauch, member of the Council and for 29 years superintendent of the Victoria cotton mills, has been appointed City Manager of Rock Hill, S. C. He fills the vacancy created by the resignation of T. C. Marshall.

E. H. Waterhouse, former Manager of Glenview, Ill., and Gladstone, Mich., and more recently of the WPA of Flint, has been appointed Acting City Manager of Huntington Woods, Mich., while H. G. Pope, City Manager, is on leave of absence, working for the Public Administration Service.

CLARENCE E. RIDLEY,
Executive Director, International City Managers' Association.

The Municipal Bond Market

Recent sales of new issues from the October issues of *The Bond Buyer*:

Amount	Borrower and Purpose	Rate (%)	Term (Years)	Basis (%)
$ 205,000	Brookline, Mass., State Deficit	1	1-5 Ser.	.85
250,000	Lynn, Mass., Relief	1.25	1-5 Ser.	1.18
115,000	Torrington, Conn., School	1.75	5.25 Avg.	1.57
120,000	Portland, Maine, Permanent Improvement	2.25	1-15 Ser.	2.08
150,000	Mineola, N. Y., Street Improvement	2.30	5.75 Avg.	2.26
150,000	Worthington, Minn., Electric Light and Power Plant	2.75	4.33-4.85 O.-A.	2.28
135,000	St. Paul, Minn., Airport	2.40	11.33 Avg.	2.497
200,000	South St. Paul, Minn., Sewer and Treatment Plant	3	12.25 Avg.	3
1,100,000	Duval Co. Airbase Authority, Fla., Naval Airbase	3.25	3-27 Ser.	3.20
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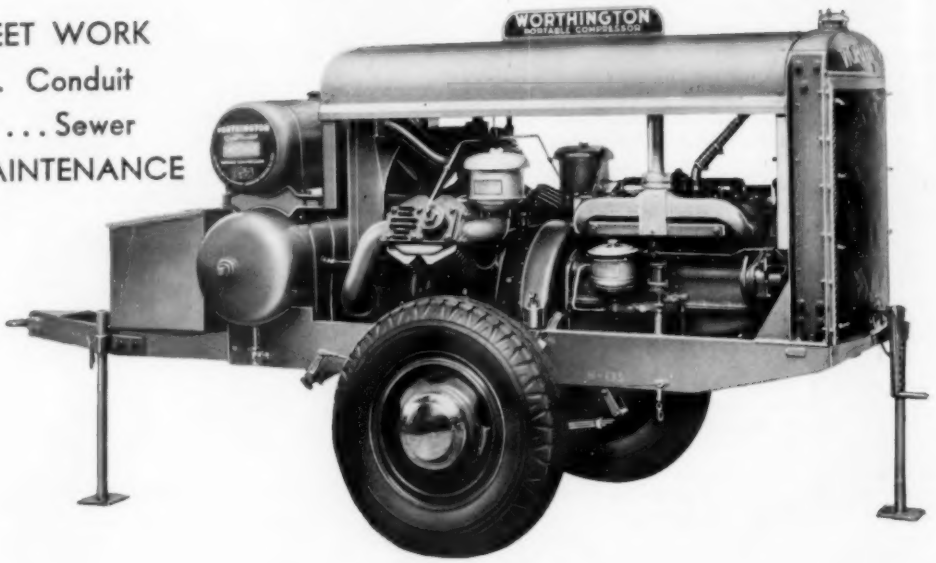

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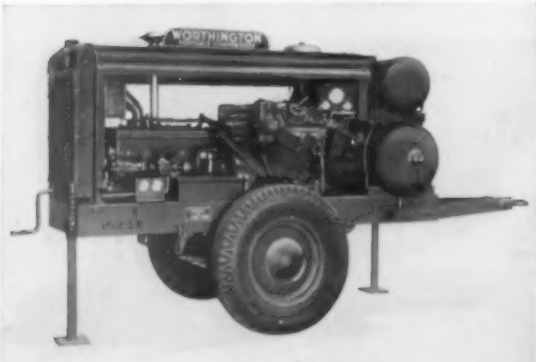

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Airports

Airports and Airplanes and the Legal Problems They Create for Cities.—Prepared by John A. McIntire, Executive Director, Charles S. Rhyne, Attorney, and Associates; National Institute of Municipal Law Officers, 730 Jackson Place, Washington, D. C. 1939. *v* + 51 *pp.* $1.00.

One of the principal sources of material for this study, as for other studies by the Institute, has come from answers to questions sent to city attorneys throughout the country. It covers, in three main sections, the legal problems that come up in: Acquisition and Location of Municipal Airports; Operation of Municipal Airports; Protection of Airport Approaches. Given in their full original form are reproductions of statutes, ordinances, etc., which it is felt are pertinent to study of the problems.

Street Construction

Proceedings, Twelfth National Asphalt Conference, Los Angeles, Calif., 1939—*The Asphalt Institute, 801 Second Ave., New York.* 256 *pp.*

Talks and discussions in the Proceedings cover three main divisions—Materials, Methods, and Equipment. Three separate general talks were also given on: Economic Factors Controlling Highway Programs; Significance of Asphalt in the Airport Program; Use of Asphalt in Water Control Projects. Again the Proceedings contains precise, clear photographs illustrating technical developments and trends.

Public Administration

Post-Entry Training for Local Government Officers.—By Charles Winter, LL.M., of Gray's Inn, Legal and Parliamentary Department, London County Council. William Hodge & Company, Ltd., London, England. 1939. *xv*+ 212 *pp.* 7/6 *net.*

"What does an officer, once appointed to the local government service [in the British Isles], do in order to equip himself for promotion in his future career?" This is the question which is answered in this study, based on replies to questionnaires. It does not include consideration of training prior to employment, or training for civil service as distinct from that for local government. Facilities and courses available are described, including: university courses; adult education; correspondence courses; summer and week-end schools; departmental and other lectures and discussion groups. The study also inquires into the demand for these facilities by officers; encouragement of training; coordination of training courses; and such questions as methods of recruitment.

Community Development

Your Home Town—A Community Development Handbook.—By Frederick P. Clark, Planning Director, New Hampshire Planning and Development Commission. Published by the Commission, Concord, N. H. 1939. 62 *pp.* 25c.

This booklet outlines briefly and effectively the factors involved in making the most of the possibilities of one's community—in making it "not necessarily 'bigger,' but better." It describes the first step in such a program—taking stock of the community's assets and liabilities, with respect to: population trends; industrial development; recreation business; residential areas; traffic and transportation; parks and playgrounds; community services; the financial plan. The second step is the preparation of the community development plan and its carrying-out, which is sketched in the second main section of the handbook. An appendix gives statutes and present activities in New Hampshire relating to community planning and development.

The Land Problem

Revolution in Land.—By Charles Abrams, Lecturer, New School for Social Research; Consultant, United States Housing Authority. Harper & Brothers, New York. 1939. *xiv* + 320 *pp.* $3.00 *from* THE AMERICAN CITY.

"Here," the publishers announce, "is really the story of two revolutions—one when the land went out of public control and an impending one when it will return to public control." The story is told in sixteen provocative chapters, several of them broader in scope and less revolutionary, perhaps, than the title of the book suggests.

"Land nationalization," says the author, "is not a panacea. Nor has it even the merit of novelty. Yet today, for the first time, it begins to appear necessary if immense groups of our population are to be saved from misery. It . . . would mean the recapture of our old frontier with just compensation to those upon whom it devolved with the years."

Mr. Abrams does not urge, of course, the nationalization of all land; his plan envisages "the acquisition of all land which has no economic place in private ownership and of the other land necessary for rational planning."

A major lack of the book is any clear analysis of the tax problem as related to the land problem. Indeed, the author seems to use *land*, and *realty*, and even *property*, as though in their relation to the incidence of taxation these three terms were practically synonymous. Pointing out, for example, that taxes rose to heights undreamed of in the good old days, he alleges in Chapter I that "land bore the burden of these crushing capital levies, while industry escaped scot-free with modest state and Federal taxes, imposed almost entirely on profit." And in the concluding chapter it is stated that: "The weight of the local tax burden falls with crushing force on city land and farm land alike, for all local governments still depend for almost their entire revenue on the obsolete and destructive general property tax, of which convenience is the only merit."

Under public ownership of land, government could collect the ground rent in lieu of the present realty tax, and thus free buildings from taxation. Why, the reader may well ask, could not a similar stimulus to housing betterment be accomplished for land still left in private ownership, by changing the general property tax or the real estate tax to a site-value tax?

But whether one can accept all its conclusions or not, the book belongs in the library of everyone who senses the fundamental importance of the land problem in our urban and national economy.

Conventions and Conferences

Conference Planning and Management.—Public Administration Service, 1313 E. 60th St., Chicago, Ill. 1939. 28 *pp.* 50c.

This is a check list for association executives of some of the principal points to be considered in arranging for a convention or conference. It is written in easy-reference, outline form, and covers location, choice of hotel, financing, promotion of attendance, the program, the participants, management, reporting of the proceedings, press and publicity, post-conference check-up. A bibliography on the subject is listed.

Vital Statistics

Summary of Vital Statistics.—Bureau of the Census, Department of Commerce, Washington, D. C. 1939.

Summary bulletins are being prepared for each state, which include besides data for the state as a whole, statistics for the cities of the various population groups, on number of deaths from selected causes, by race, in institutions; and number of births and deaths, and residential data for counties and cities of 10,000 or more.

Police

Modern Police Work, including Detective Duty—A Book for Police Officers of All Ranks. —By James J. Skehan, Retired Captain, New York City Police Department. Apply to The Police Journal, 1123 Broadway, New York. 1939. 657 *pp.* $3.00.

A handbook covering all phases of the work of the policeman, thoroughly, tersely and with interest; in easy reference, largely outline form. Factors that produce crime and criminals are outlined; the different types of criminals that inhabit the underworld are described and classified in detail. Other chapters deal with Arrest and Extradition; Witnesses and Suspects; Evidence; Detection and Apprehension of Criminals; Surveillance and Quest of a Criminal Suspect; Civil Rights; The Technical Laboratory; Care and Use of Revolver and Pistol; First Aid to Sick and Injured. The question of police promotion is also discussed, and sample problems encountered by policemen are presented.

Highway Transportation

Highway Transportation Re-makes America. —National Highway Users Conference, National Press Building, Washington, D. C. 1939. 32 *pp.*

Advances in highway transportation and the revolutionary effect that it has had on American life are reviewed in this pamphlet. It points out restrictions that are being put on this development, in such forms as excessive taxes; diversion of motor-vehicle taxes to purposes other than highway; interstate barriers; unnecessary restrictions on weight and size of motor vehicles; government construction, maintenance and administration of highways for profit. Means of eliminating these restrictions are outlined.

Appraising

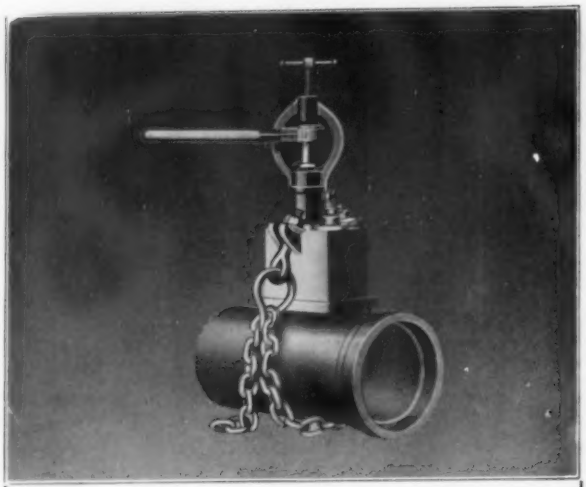
The Room Unit System—A Manual for Appraisers.—By John D. Cole, Engineer and Appraiser. The Cole-Layer Co., Appraisal Engineers, 11 W. Monument Ave., Dayton, Ohio. 1939. 217 *pp.* $3.50.

The appraisal system presented in this handbook uses a weighted unit value for each individual room and feature of a house. It is based on the principle that the value of a dwelling is in proportion to its capacity for service and use, and depends definitely on the number of rooms, their size, arrangement, and specifications. The handbook not only explains this system in detail, but discusses depreciation, land valuation and capitalization of rentals, thus providing a complete working manual for appraisers. Appraisal schedules for different grades of dwellings are included.

Land Subdivision

Land Subdivision.—The Committee of the City Planning Division on Land Subdivision Manual, American Society of Civil Engineers, 1916 S Street, N. W., Washington, D. C. 1939. 75 *pp.* $1.20.

"Land subdivision is truly the first step in the process of community building," states the introduction of this compact, valuable manual; and with the principles and practices of this key element of city development it is occupied. It defines the purpose and scope of subdivision design; analyzes good residential, commercial and industrial subdivision design. Elements which affect the costs of subdivisions—such as land costs, size and shape of blocks and lots, size and arrangement of streets and topography—are presented in detail in a chapter on the Economics of Land Subdivision. Problems of Readjustment of Vacant Subdivisions, Resubdivision of Land in Obsolete Urban Areas, and Public Control and Regulation, are also dealt with in separate chapters.



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Rods and Machines Sent on Approval

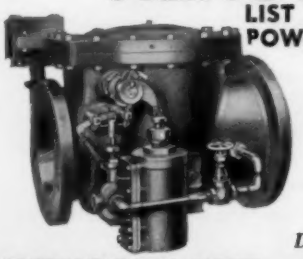
W. H. STEWART

Manufacturers of a complete line of Sewer Cleaning Equipment since 1901.

Jacksonville, Fla. P. O. Box 581 — Windsor, Ont., Can. 779 Argyle Rd., — Syracuse, N. Y. P. O. Box 767

RENSSELAER

LIST 34 CLEARWAY POWER CHECK VALVES



- Cut Pumping Costs
- Eliminate Slam
- Reduce Wear on Working Parts
- Close Quietly

Details in Bulletin "V"

RENSSELAER VALVE CO.
TROY, NEW YORK

Housing

The Detroit Housing Market—An Analysis of Current Conditions.—By Richard U. Ratcliff, Assistant Professor of Real Estate Management, School of Business Administration, University of Michigan, Ann Arbor, Mich. 1939. 54 *pp.*

The picture of the Detroit market is presented in this study by an analysis of the forces which affect Demand—Employment, Income, Population; and Supply—Building Activity, Building Costs, Subdividing, Mortgage Market, FHA-Insured Mortgages; and an analysis of certain Market Indicators which reflect the interaction of the factors of demand and supply—Rents, Vacancy, Characteristics of Occupancy, and other miscellaneous indicators. The summary picture is one of general trends and their underlying causes, particularly of the post-depression period up to the present time. Outline form and frequent summary sentences make the report particularly easy reading.

Health

Health for New York City's Millions—An Account of Activities of the Department of Health of the City of New York for 1938 with Comparative Vital Statistics Tables.—John L. Rice, M.D., Commissioner of Health, Department of Health, 125 Worth St., New York. 1939. 295 *pp.*

The three main sections of this report describe Administrative; Medical, Dental, Nursing and Bacteriological; and sanitary activities of the Department. The style of presentation is popular, and the report has made use of dramatic, popular-interest photographs to give it public appeal.

Business and Industrial Development

An Economic and Industrial Analysis of New Haven, Conn.—New Haven Chamber of Commerce, 152 Temple St., New Haven, Conn. 1939. 110 *pp.* $2.00.

A particularly comprehensive, well-presented survey of business and industrial conditions and the forces that affect them in New Haven. Avoiding exaggerated, high-pressure sales technique, it covers the industrial, commercial, governmental, educational and social set-up of this 301-year-old city.

Community Development

Town Building.—By Bernard Smith, C. E., Holland's Southern Institute for Town Service, Dallas, Texas. 1939. *viii* + 159 *pp.* 50c.

This is a study manual intended for Town-Building Discussion Clubs or other citizen groups interested in the general development of their cities. Grouped under three main headings—Social, Economic and Governmental, it covers practically every aspect of city life, from the intangible quality of town culture to the practical considerations of garbage collection and disposal. It is written in a style calculated to arouse citizens' interest in the city's problems.

Housing

Housing in Philadelphia.—By Bernard J. Newman, The Philadelphia Housing Association, 1600 Walnut St., Philadelphia, Pa. 1939. 50 *pp.* 25c.

Again the active Philadelphia Housing Association issues a straightforward, to-the-point report on housing conditions in Philadelphia, and the activities of the Association, during the past year. The report points out that the most significant gain in the field of Philadelphia housing in 1938 was that public opinion became interested enough in getting rid of the slums to support a public housing program. This program is discussed, and summaries are made, for the past year, of new dwelling construction, demolitions, sheriff sales, rents, substandard housing and insanitation, and the educational activities of the Association. The relation of assessments and rent is analyzed with a view to determining whether assessments in the city are too high.

Planning and Zoning

State Legislation on Planning, Zoning and Platting.—National Resources Planning Board, Washington, D. C. 1939. *vi* + 60 *pp.*

Incorporating changes in planning, zoning and platting laws which were made in 1938, this is a revision of Circular XII, a survey of these laws in the United States, which was published last year. Textual matter is arranged according to states. An introduction indicates general trends, and tables and maps give overall pictures of the extent of planning, zoning and platting laws in the country.

Other Reports Received

AUSTIN, TEXAS.—Bibliography on Texas Municipal Government.—Compiled by Margaret Davis Webb, Research Assistant, Bureau of Municipal Research, The University of Texas. 1939. 34 pp.

BUENOS AIRES, ARGENTINA.—"Contribucion al Estudio do Nuevas Avendas," and "A Mano Unica—Organizacion del Trafico en el Primer Haz do las Calles Centrales de la Capital Federal," by Marcelina del Mazo. Ferrari Hnos., Bartolomé Mitre 2734 - 2748, Buenos Aires. 1937 and 1935, respectively (just received by THE AMERICAN CITY). 71 pp. and 130 pp., respectively.

BUFFALO, N. Y.—Traffic Survey, 1936-7. Buffalo Police Department. 197 pp.

GARDEN CITY, N. Y.—Annual Report, year ending Feb. 28, 1939. 31 pp.

GLOUCESTER, MASS.—Inaugural Address of the Mayor, Jan. 1, 1939, with the Annual Reports, 1938, and Revisions and Amendments to the Ordinances. 291 pp.

GRAND RAPIDS, MICH.—Report on Traffic and Safety to the Grand Rapids Association of Insurance Agents.—By Jensen, Bowen & Farrell, Engineers, Ann Arbor, Mich. 1939. 103 pp. $5.00.

HUNTINGTON PARK, CALIF.—Annual Report, year ended June 30, 1939. 44 pp.

KANSAS CITY, MO.—"Getting a City Manager." Civic Research Institute, 912 Baltimore Ave. 1939. 5 pp.

LADUE, MO.—A Preliminary Report Upon a City Plan. By Harland Bartholomew and Associates, St. Louis, Mo. 1939. 40 pp. Apply to City Clerk. (See page 87 this issue.)

MANHATTAN, BOROUGH OF, N. Y.—Manhattan, Jan. 1, 1938-June 30, 1939.—By Stanley M. Isaacs, President of the Borough. 52 pp.

MILWAUKEE, WIS.—Milwaukee Civic News, Annual Report number, 1938. The Municipal Reference Library. 24 pp.

NORMAN, OKLA.—Annual Report, City Manager, year ended June 30, 1939. 24 pp.

OAKLAND, CALIF.—Auditor's Annual Report, year ended June 30, 1939. 44 pp.

OWATONNA, MINN.—Official Finance Committee Report, 1938. 37 pp.

PASADENA, CALIF.—Annual Report, City Manager, 1938-39. 27 pp.

PORTLAND, ORE.—"Civic Review, 1938-9." 72 pp.

Conventions - - When and Where

Meeting is annual convention unless otherwise designated

NOVEMBER 16-18.—INDIANAPOLIS, IND.
National Municipal League. (Hotel Severin.) Sec., Howard P. Jones, 299 Broadway, New York.

NOVEMBER 16-17.—ATLANTIC CITY, N. J.
New Jersey State League of Municipalities. Exec. Sec., S. S. Kenworthy, 808 Trenton Trust Bldg., Trenton, N. J.

NOVEMBER 20-21.—OKLAHOMA CITY, OKLA.
Oklahoma Municipal League. Exec. Sec., Frank C. Higginbotham, Shirvan Tower Hotel, Oklahoma City, Okla.

NOVEMBER 27-29.—WASHINGTON, D. C.
National Institute of Municipal Law Officers. (Mayflower Hotel.) Exec. Dir., John A. McIntire, 730 Jackson Pl., N. W., Washington, D. C.

DECEMBER 4-6.—HOLLYWOOD, FLA.
Southeastern Planning Conference. (Hollywood Beach Hotel.) Convention Mgr., I. N. Parrish, Hollywood Beach Hotel, Hollywood, Florida.

DECEMBER 6-10.—WASHINGTON, D. C.
American Public Welfare Association. Dir., Fred K. Hoehler, 1313 E. 60th St., Chicago, Ill.

DECEMBER 6-8.—NEW ORLEANS, LA.
National Association of Housing Officials. (St. Charles Hotel.) Dir., Coleman Woodbury, 1313 E. 60th St., Chicago, Ill.

DECEMBER 27-29.—PHILADELPHIA, PA.
Tax Policy League. Exec. Sec., Mabel L. Walker, 907 Broadway, New York.

JANUARY 26-28, 1940.—WASHINGTON, D. C.
National Public Housing Conference. Sec., Helen Alfred, 112 E. 22d St., New York.

JANUARY 29, WEEK OF.—CHICAGO, ILL.
American Road Builders' Association. (International Amphitheater.) Engr.-Dir., Charles M. Upham, 952 Nat'l Press Bldg., Washington, D. C.

MARCH 18-20.—BIRMINGHAM, ALA.
American Water Works Association—Southeastern Section. Sec., B. P. Rice, Room 425, State Office Bldg., Columbia, S. C.

MARCH 20-22.—TRENTON, N. J.
New Jersey Sewage Works Association. (Stacy-Trent Hotel.) Sec., John R. Downes, Bound Brook, N. J.

MARCH 27-29.—PLACE LATER.
American Water Works Association—Canadian Section. Sec.-Treas., Dr. A. E. Berry, Dept. of Health, Parliament Bldg., Toronto, Ontario.

APRIL 8-10.—LEXINGTON, KY.
American Water Works Association—Kentucky-Tennessee Section. Sec.-Treas., Howard D. Schmidt, 420 6th Ave., N., Nashville, Tenn.

APRIL 11-12.—WEST LAFAYETTE, IND.
American Water Works Association—Indiana Section. (Purdue University.) Sec., H. G. Horstman, 603 Traction Terminal Bldg., Indianapolis, Ind.

APRIL 21-25.—KANSAS CITY, MO.
American Water Works Association. (Hotels Phillips, President and Muehlebach.) Sec., Harry E. Jordan, 22 E. 40th Street, New York.

APRIL 30-MAY 2.—WASHINGTON, D. C.
Chamber of Commerce of the United States. Sec., Ralph Bradford, 1615 H St., N. W., Washington, D. C.

MAY 9-10.—AKRON, OHIO.
American Water Works Association—Ohio Section. Sec., T. R. Lathrop, State Dept. of Health, Columbus, Ohio.

MAY 9-11.—PORTLAND, ORE.
American Water Works Association—Pacific Northwest Section. (Portland Hotel.) Sec., Fred Merryfield, Oregon State College, Corvallis, Ore.

MAY 16-18.—PLACE LATER.
American Water Works Association—Florida Section. Sec., A. P. Black, Univ. of Florida, Gainesville, Fla.

MAY 22-24.—CHICAGO, ILL.
American Water Works Association—Illinois Section. (Congress Hotel.) Sec., H. E. Hudson, Jr., 6843 Oglesby Ave., Chicago, Ill.

MAY 26-JUNE 1.—CINCINNATI, OHIO.
American Library Association. Sec., Carl H. Milam, 520 N. Michigan Avenue, Chicago, Illinois.

JUNE 24-28.—STATE COLLEGE, PA.
Pennsylvania Water Works Operators' Association. Sec.-Treas., I. M. Glace, 22 S. 22d St., Harrisburg, Pa.

Highland Park, Mich.
AGREES WITH Washington, D. C.

★ ★ ★ ★ ★ ★

On Oct. 18th, Karpark Automatic Meters went to work on the streets of Highland Park and are doing the *"thoroughbred" job that only Karpark Meters can do.

Highland Park, another city adjacent to Detroit, has taken advantage of the important contribution of the United States Bureau of Standards to municipal governments by selecting KARPARK AUTOMATIC METERS manufactured under the Bureau's rigid, *original* specifications for Parking Meters.

The KARPARK Corporation invites every city official who wishes to avoid "headaches" in solving parking meter problems to write for details.

* "thoroughbred" means—greater accuracy—sturdier construction—minimum maintenance cost—and happy motorists!

All KARPARK Meters are licensed under the patents of VEHICULAR PARKING LTD.

THE KARPARK CORPORATION
420 LEXINGTON AVENUE • NEW YORK, N. Y.

PLANNING....

● Being host to a convention is a larger matter than supplying rooms and meals to the delegates. It requires careful planning that every detail of service . . . from the registration desk to the banquet hall . . . may contribute to the success of the convention and the enjoyment of the delegates. Hotels Statler work closely with the Convention Committees of associations in planning every phase of their conventions... meeting rooms, committee rooms, exhibition space, luncheon and dinner meetings, etc. And the comfort of every delegate and member always stands at the head of the list of Things To Be Planned.

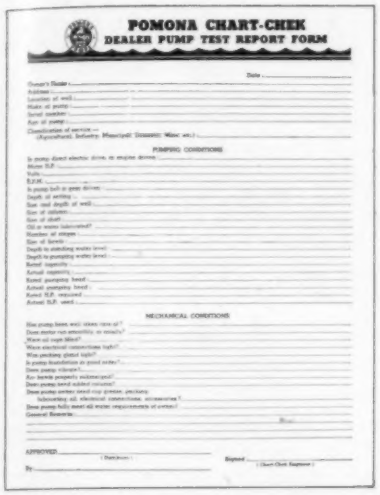
HOTELS STATLER CO., Inc.
Executive Offices: Hotel Pennsylvania
New York City

Stay **HOTELS STATLER** *in*
BOSTON • BUFFALO • CLEVELAND • DETROIT • ST. LOUIS • NEW YORK (*Hotel Pennsylvania*)

During November we hope you will remember to mention THE AMERICAN CITY.

News and Illustrations

Items of Interest to City, Town and County Officials, and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings



POMONA CHART-CHEK
DEALER PUMP TEST REPORT FORM

One of the two Chart-Chek forms. The second is the owner's test report

Pump Manufacturer Checks Pumps in Service

Pomona Pump Co., Pomona, Calif., has instituted a campaign to check all Pomona pumps in service by means of the "Chart-Chek." The manufacturer presents the pump owner, free of charge, with a chart which shows clearly the essential data on the test of his pumping installation. It covers all phases of testing and provides the pump owner with a complete record of performance, which in turn may be analyzed by both himself and a Pomona engineer at any time. The test also provides a record of performance which may be used by the owner and engineer for further periodic check-ups.

In arriving at the final completed form of the Pump Test Report forms, Pomona Pump Co. engineers were guided by a 37-year experience which conclusively showed that if the data contained in the report could be transferred to a simple chart, the pump owner could more easily grasp its significance and then be guided in his decision as to recommended changes if required.

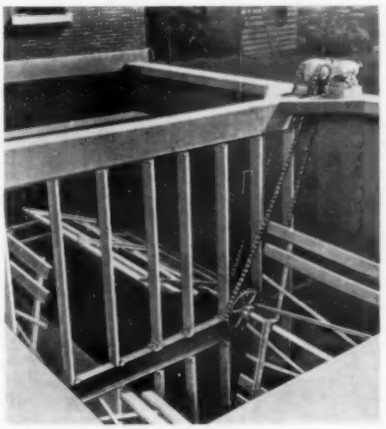
Readers of THE AMERICAN CITY wishing further information regarding the Chart-Chek should write immediately to Pomona Pump Co., mentioning this item.

Sewage- and Water-Works Mixing-Basin Equipment

The Langelier Process of multi-stage flocculation, or Slo-Mixing, has been incorporated by the Chain Belt Co., Milwaukee, Wis., in its design of equipment for mixing basins in sewage- and water-treatment plants. The Rex Slo-Mixer obtains multi-stage slow mixing by progressively decreasing either the paddle speed or the paddle area or both. Paddles are installed with the direction of rotation at right angles to the flow of the liquid. This arrangement, coupled with the use of a special baffle arrangement, assures positive mixing, the elimination of short-circuiting, and a minimum of power consumption.

Several possible drive arrangements are available, allowing the selection of the most economical and efficient drive for each application. A variable speed unit providing a 3:1 range is usually incorporated in the drive to increase the flexibility and to allow the operator to keep the equipment in step with the liquid flow and changes in analyses.

These mixers may be installed in existing basins, or a portion of existing sedimentation basins may readily be converted into Slo-Mixing basins. For existing plants and new installations, an economical arrangement may be worked out for the mixers alone or in combination with mechanical clarifiers in the sedimentation basins. Complete information on Slo-Mixing may be secured direct from the Chain Belt Co. by mentioning this item.



A Typical Arrangement of Rex Slo-Mixers to Increase Flocculation

New Sales Engineer for Ozone Processes, Inc.

Joseph Metzendorf has been appointed Sales Engineer for Ozone Processes, Inc., of Philadelphia, an operating company of the Welsbach Street Illuminating Company group, which designs, manufactures and installs equipment for the ozone processing of water and for other industrial uses necessitating large capacities of ozone.

Mr. Metzendorf, a graduate of Colorado State and New York Universities in mechanical engineering, was formerly with the Commonwealth Gas Corporation, New York, and was one of the organizers of the Atlantic States Gas Co., a subsidiary in the Butane-Propane gas industry, in which he acted in a sales and executive capacity.

New Street Sweeper Introduced by Van Dorn

The Van Dorn Iron Works Co., 2685 East 79th Street, Cleveland, Ohio, maker of steel and iron products for over eighty years, has entered the field of sanitation machinery with a new street sweeper that is notable for its sanitation attachments and a novel and time-saving feature.

No longer need débris swept from the street be dumped back on it, necessitating the use of a follow-up crew hand-shoveling the dirt to a truck, for the Van Dorn sweeper deposits its sweepings in containers which are eventually deposited with a municipality's waste collection. A Department of Sanitation can either arrange to pick up these containers with the regular garbage and ashes, or along with the contents of refuse baskets placed on a street for accumulated trash.

The manufacturer has estimated that this system will save time and money, inasmuch as it saves lost time in going to and from city dumps and does away with any unsightly piles of dirt which might be left on streets to be blown back or scattered by passing cars.

This sweeper has an attachment for snowplowing and can also be used in cleaning park walks, sidewalks, industrial plants and yards, docks and railroad platforms, because it is able to turn in a 10-foot space. Where convenient, the dumping unit alone may be used, and the containers left out.

Full information and specifications may be received by writing direct to the manufacturer.

The New Van Dorn Street Sweeper That Deposits the Sweepings in Removable Containers

IF YOU ARE BUYING
A SNOW LOADER THIS FALL
. . . you must
investigate the
HAISS "75"

which has demonstrated
in the heavy snow belt
that IT HAS ability to handle frozen snowpiles
—as well as handle 10 yards a minute . . . Write
GEORGE HAISS MANUFACTURING CO., INC.
140th St. & Park Ave., New York, N.Y.

ALSO SPECIAL "SNOW" CLAMSHELL BUCKETS FOR CRANE USE

1. Clean the flange.

2. Measure the diameter.

3. Cut length of TAPAX needed.

TAKING THE BANG
OUT OF MANHOLE COVERS WITH
TAPAX

4. Form it with hands.

Quick - Easy - Lasting

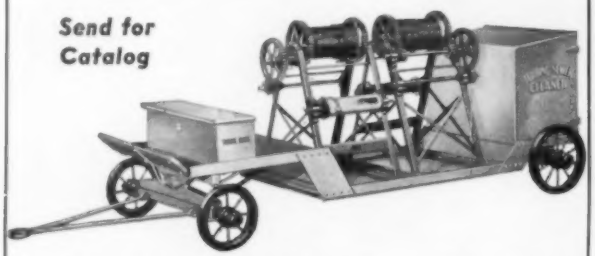
TAPAX is the surest relief from rattling, banging manhole covers and offers you the simplest solution for noisy covers at a cost of comparatively a few cents an application. TAPAX is a resilient cushioned composition of asbestos and bronze, shipped in convenient reels. It will "stay put" for years. Ask for sample.

5. Put TAPAX—sticky side down—on flange. Replace cover.

LET US SEND YOU A TRIAL ORDER REEL.

TAPAX MFG. CO., INC.
MAMARONECK NEW YORK

Send for Catalog



Complete Turbine Type Sewer Cleaner

TURBINE SEWER MACH. CO., Inc.
5210 W. State St. Milwaukee, Wis.

Stop Rust in Steel Tanks ELECTRICALLY with
"RUSTOP"

THE CATHODIC METHOD of eliminating and preventing rust in STEEL WATER TANKS. Cleans old tanks. Keeps new tanks clean. Eliminates necessity of painting below overflow.

Used by many cities and manufacturers. Write for list.

Patents Pending

ELECTRO RUST-PROOFING CO.
Third National Bldg. Dayton, Ohio

Aeroil TAR KETTLES
SAVE 50% ON FUEL
HEAT TWICE AS FAST
COMPLETELY INSULATED - HEATED from the INSIDE
Latest development for heating tar, pitch, asphalt and other bituminous materials, quickly and economically.
AEROIL BURNER CO., Inc.
Box 599 — West New York, N. J.
BRANCHES
Chicago • San Francisco • Dallas, Texas

FREE
SEND FOR NEW 12-PAGE CATALOG ON THIS REMARKABLE NEW HEATER
Ask for Bulletin 182-H

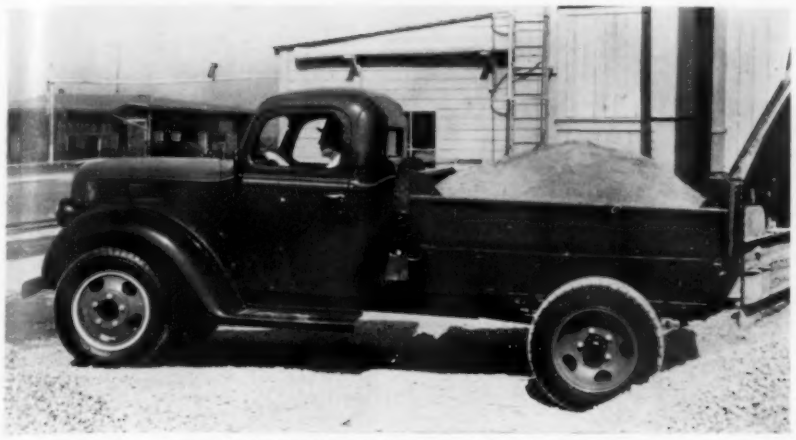
OUTDOOR DRINKING FOUNTAIN ESSENTIALS:

1. Materials that resist abuse and exposure (freezing, thawing, etc.)
2. A self-closing valve, for economy in use of water
3. An unfailing, rustless valve spring
4. A solid bronze bowl and bubbler font
5. Rustless brass piping
6. Easily repaired without digging up

Always write the name MURDOCK into your fountain specifications, to insure best water service.

Approved by over 900 cities.

The Murdock Mfg. & Supply Co.
CINCINNATI Since 1853 OHIO



The Newly Styled Ford V-8 Dump-Truck for 1940

The 1940 Models of Ford Trucks

According to The Ford Motor Co., Dearborn, Mich., there are forty important improvements in the 1940 line of Ford V-8 trucks and commercial cars. With forty-two body and chassis types, six wheelbases and three V-8 engines, these models represent the widest available selection in Ford history. All units have hydraulic brakes.

A new 158-inch wheelbase chassis is available in both conventional and cab-over-engine types, providing an 84-inch cab-to-axle dimension for the conventional type, and a 117-inch dimension on the cab-over-engine type. Another change increases the general "under-the-hood" accessibility. The fan is mounted on the crankshaft in all conventional trucks, making it easier to reach the distributor. A lower radiator and single fan belt contribute to the ease of servicing. The new design provides for drive through the springs. This introduces chassis changes which make it much easier to service the clutch, transmission, universal joints and rear axle, and facilitates the installation of special equipment.

The complete list of the forty improvements for 1940 Ford trucks and details of all styles may be secured direct from the Ford Motor Co., Dearborn, Mich., by mentioning this announcement.

New Outdoor Fountain Always Safe for Drinking

The Murdock "Air Lock" outdoor anti-freezing drinking fountain, which has recently been subjected to very complete tests for the Wisconsin State Board of Health by the Department of Civil Engineering at the University of Wisconsin, has a number of features which are of particular interest to park and playground superintendents, as well as health departments. The construction of the fountain is such that cross-connections and back-siphonage from the sewer are entirely eliminated. Also, no extensive draining pits are necessary and it can be direct-connected to the sewer without danger of pollution. The fountain is installed as a unit, insuring the operation of the Air Lock feature, which prevents delivery of water to the bubbler-head when a sewer is stopped up, causing a backflow in the air chamber.

When the foot pedal on the fountain is depressed, the drain valve is closed and the supply valve is open, admitting water to the bubbler pipe for drinking purposes. When the pedal is released, the supply valve is closed and the drain valve is open, allowing the water in the pipe connecting with the bubbler to flow into the clean water chamber, filling it, the overflow passing into the air chamber and then into the sewer. If the sewer becomes clogged and creates a back pressure in the sewer line, the resulting compression of air in the air chamber forces the clean water down from its high level in the clean-water chamber, continuing the air separation between the water in the air chamber and the water in the clean-water cup. This air pocket always remains in this position under back pressure from the sewer and prevents, without any mechanical moving parts, any cross-connection in the fountain between the drinking water and the sewer water.

A new special folder on this fountain is available to municipal officials free on request addressed to The Murdock Mfg. & Supply Co., Cincinnati, Ohio.

Automatic Heater for Chlorine Rooms

A compact automatic electric heater for chlorine rooms, designed to maintain the temperature at any pre-set degree, has been announced by Proportioneers, Inc., 9 Codding St., Providence, R. I. This Chlor-O-Heater is controlled by a wall thermostat so that it automatically maintains the pre-set temperature. If set for 40 degrees F., or some temperature estimated to be safe for the equipment, the thermostat will turn the heater on and off in accordance with the weather variations, so that safety is had at minimum cost. It is a well-known fact that chlorine freezes up during its expansion at moderate temperatures, and the protection of chlorine equipment with a comparatively small amount of heat is an absolute necessity to insure constant uniform successful winter chlorination. It is also useful to prevent "frosting" in ammonia gas feeders.

The complete standardized package comprising the Chlor-O-Heater is built in production and is sold at a very moderate figure, including the wall thermostat and the portable heater element, which can be placed anywhere in the Chlorinator house for best distribution of heat and protection of equipment. The standard unit is capable of maintaining a reasonably well-built enclosure, 7 x 10 x 10 feet, or a total cubage of 700 cubic feet at 40 degrees F. when the outside temperature is 2 degrees below zero. The unit draws a maximum current output of 700 watts. It may be used on either alternating or direct current, 110 or 220 volts, and the wiring is very simple. An installation diagram of the Chlor-O-Heater will be sent free.

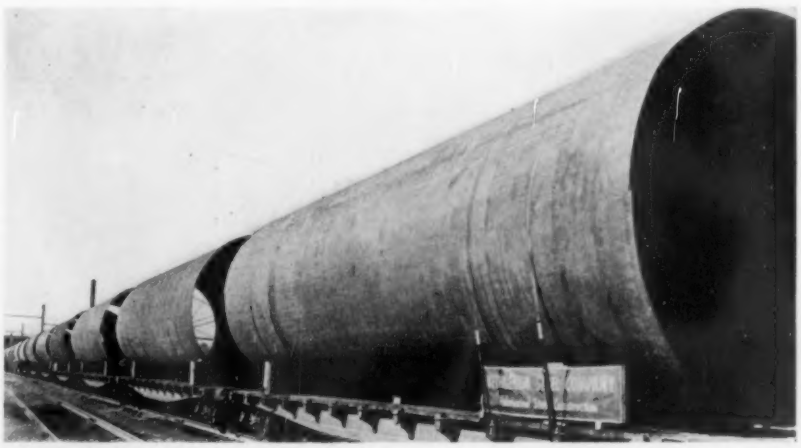
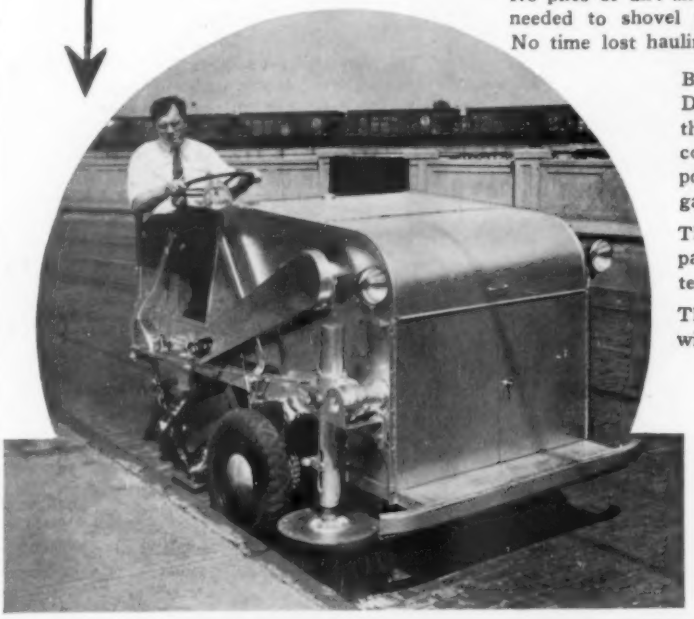


PHOTO FROM BETHLEHEM STEEL CO.

The 50-car train of 12-foot 4-inch steel pipe forms a veritable tunnel on wheels. It is en route to Baltimore, Md., from the Leetsdale, Pa., plant of the Bethlehem Steel Co., to be used in lining a 7-mile water tunnel between Loch Raven and Lake Montebello. About 2,000 feet of pipe is shown in the illustration, of the total of 11,635 feet of the same size and 1,900 feet of 10-foot

The *new* VanDorn Street Sweeper
leaves no gutter debris



No piles of dirt and leaves left in the gutters—No follow-up crew needed to shovel that refuse into a truck and haul it away—No time lost hauling that refuse to the dumps—

Because—inside the all-metal body of the Van Dorn Street Sweeper are containers, in which all the dirt swept off the street is deposited. These containers can be removed and left at convenient points for the attention of the regular ash-and-garbage collection crews.

The Sweeper can also be used for sidewalks, parks, courtyards, etc., because it will turn in a ten-foot space.

The Van Dorn Street Sweeper is also equipped with a snow-plow attachment, if desired.

Full specifications and information will be sent on request.

THE VAN DORN IRON WORKS COMPANY

Makers of steel and iron products for more than sixty years

CLEVELAND OHIO

HEIL UNITS CUT COSTS

HEIL HYDRAULIC "SL" DUMP UNIT

HEIL CONVEYOR SANITATION UNIT

HEIL STREAMLINE WATER TANK

HEIL STANDARD STREET FLUSHER

Popular Heil Hoists, Bodies and Tanks are designed and built for heavy-duty service . . . Experienced Heil Transportation engineers are prepared to give you equipment exactly suited to your needs . . . Get Heil recommendations before you buy—Address:

THE HEIL CO.
MILWAUKEE, WISCONSIN
HILLSIDE, NEW JERSEY

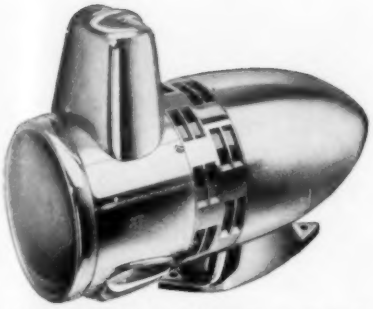
CUT MAINTENANCE COSTS 75%

Concrete slab maintenance costs can be reduced as much as 75% by the Koehring Mud-Jack Method. The Koehring Mud-Jack raises sunken concrete . . . walks, curb and gutter, driveways, streets, highways, etc., eliminating reconstruction costs. Write for the new Mud-Jack Bulletin illustrating applications and describing the Mud-Jack Method.

KOEHRING HEAVY DUTY

KOEHRING COMPANY
MILWAUKEE • WISCONSIN

MUD-JACK METHOD



New Wigwag Siren for Emergency Vehicle

New Emergency Sirens Have Wigwag Light

In order to afford greater protection to operators of emergency vehicles, such as ambulances, police patrols and fire apparatus, Federal Electric Co., 87 South State Street, Chicago, Ill., has developed a new combination siren and oscillating light. In addition to the powerful siren, the brilliant beam of light of the Traffik-King siren sweeps from building line to building line for blocks ahead, warning unwary motorists and pedestrians. This light not only identifies the vehicle as engaged on an emergency call requiring right-of-way, but provides visible as well as audible warning far in advance of the approach of the vehicle.

With these two signals combined in one streamlined unit, the appearance of the vehicle is improved and the expense of the installation reduced. This Traffik-King line is available in three styles: the C-8, the most powerful coaster siren; the No. 78, a doubletone coaster siren; and the No. 67, a deep-toned long-roll siren. The No. 78 doubletone, which coasts for two minutes, is illustrated and the entire line is described in Bulletin No. 64 which will be sent free on request to those mentioning this item.

Jack Chambers Dies

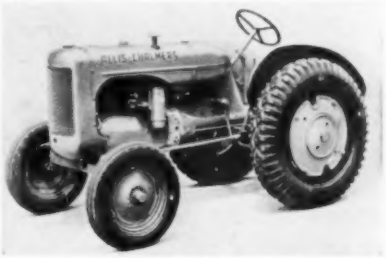
H. H. "Jack" Chambers, Western Sales Manager, Caterpillar Tractor Co., of Peoria, Ill., died at Oakland, Calif., on October 21, after a lingering illness. Chambers was well known in all parts of the United States for a life distinguished by self-education, perseverance and honesty. He started with the Holt Mfg. Co. in 1914 as a shop man and was later transferred to the service department. After service in the World War he became Assistant Service Manager, and in 1921, Service Engineer, for Holt. After a few years as a Caterpillar distributor, Mr. Chambers rejoined Caterpillar in 1928, and the next year he was named Sales Manager of the Western Division at San Leandro, Calif.

A. R. B. A.
City Officials' Division
Chicago, Ill.
January 29-February 2, 1940

New Wheeled Tractor Announced by A-C Mfg. Co.

The new Model IB industrial tractor recently announced by Allis-Chalmers Mfg. Co., Milwaukee, Wis., is built especially for industrial work. It has 13.5 drawbar horsepower and weighs 2,140 pounds. In the municipal field it will be particularly useful in cemeteries, parks and airports, as well as for the lighter work of plowing sidewalks. This new model sets low on the ground and has the stability to haul up and down inclined ramps without tipping. It has both a foot brake and individual hand brakes on the rear wheels and three forward speeds and one reverse.

A structural steel frame surrounds the engine and radiator, permitting mounting of snow-plows, brooms, compressors and highway mowers. For power, the tractor has an 18-hp heavy-duty, medium-speed tractor engine with muffler, and foot accelerator, and can be equipped with numerous accessories such as power take-off, belt pulley, generator, lights, etc.



The New Model IB Industrial Tractor of Allis-Chalmers

Frank Waring Joins Good Roads Sales Staff

Frank S. Waring, formerly with Walsh-Holyoke Steam Boiler Works, Inc., Holyoke, Mass., has joined the Good Roads Machinery Corporation, Kennett Square, Pa., as Sales Manager of the Snow-Plow Division. Mr. Waring has been directly associated with snow-plow business since 1928.

Straight Pipe Curved to Fit New Plans

When the town of Milford, N. H., ordered Century asbestos-cement pipe from Keasbey & Mattison Co., Ambler, Pa., it was the intention to run a straight pipe line from the town reservoir to the distribution system. At the last minute it was impossible to get a straight right-of-way, so that a wide curve had to be built into the line, starting at the reservoir. At that time the pipe had arrived on the site and they were ready to begin to lay it in the new trench.

The problem was solved right in the field by sawing standard 13-foot lengths of Century asbestos-cement pipe into three equal sections. By coupling these shorter straight pieces with standard "Century" flexible couplings, the curve was laid in a minimum of time and without the use of any elbows or bends. The radius of the curve was from 45 to 50 feet for the 12-inch pipe, and its curvature was 90 degrees. This serves as an interesting demonstration that this method of coupling the pipe can eliminate any need for ordering special pipe sections which might delay a job and add considerably to its cost.

The Long Curve Made Necessary by Right-of-Way Troubles at Milford, N. H., and a Close-Up of the Line Showing the Short, Straight Lengths, Couplings and Smooth Curve

IF YOU'RE LOOKING FOR TRUCK FEATURES . . .

Look at the FORD!

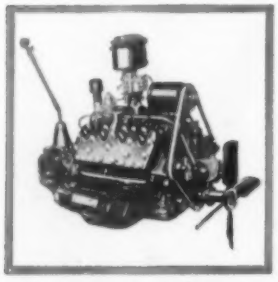
● When the Ford Motor Company speaks of truck features, it doesn't mean "gadgets." Ford features are outstanding qualities incorporated in the Ford Truck to make it tougher, more rugged, more dependable, more economical — or to make the unit easier to handle and operate, increase the driver's comfort, give added protection to the load and contribute to safety.

Shown here are a few important Ford features for 1940. There are many more which you're invited to see at your Ford dealer's. Make a note of them. Compare them with the features offered in other trucks of about the same price — or any price. Arrange for an "on-the-job" test and see what these features mean in performance and economy before you spend another truck dollar.

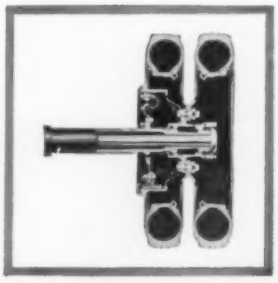
AMONG THE FORD FEATURES FOR 1940

6 wheelbases, 42 body and chassis types. New Sealed-Beam Headlamps. New, larger battery —more powerful generator. Battery Condition Indicator. Worm-and-roller steering. Straddle-mounted driving pinion — ring gear thrust plate. Needle-roller bearing universal joints. Factory-installed two-speed rear axle (at extra cost). Ford Engine and Parts Exchange Plan.

FORD MOTOR COMPANY, BUILDERS OF FORD V-8 AND MERCURY CARS, FORD TRUCKS, COMMERCIAL CARS, STATION WAGONS AND TRANSIT BUSES

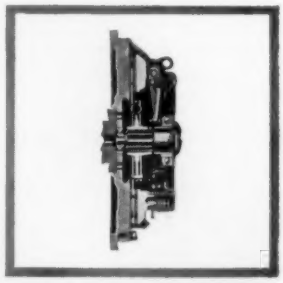


3 V-8 engines. 95, 85 and 60 hp. The only V-type, eight-cylinder truck engines on the market today.



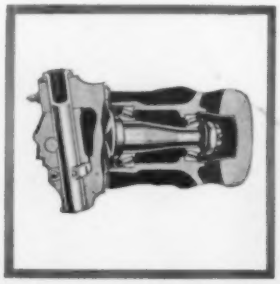
Full-floating rear axle. Relieves the axle shafts of all load stresses. Minimizes possibility of shaft failure.

Big hydraulic brakes. Unusually large brake lining area. Dependable, built to Ford standards of safety.

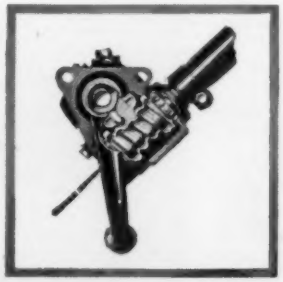


Semi-centrifugal clutch. Provides high power-transmitting capacity combined with low pedal pressure.

New front springs. Provide an additional point of support for frame side-members.



Rugged spindle bolt. Sturdy design for extra reliability. Spindle bolt has 1¼-in. diameter.



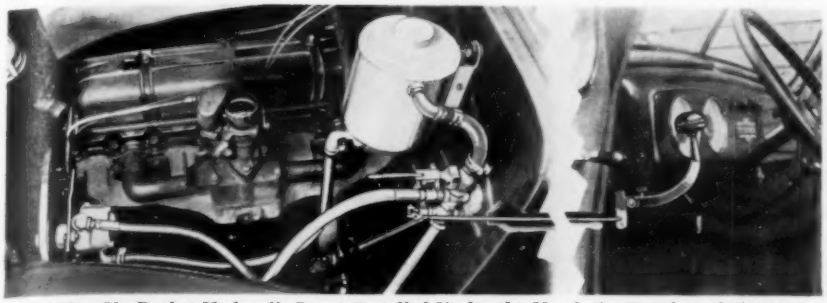
Worm and roller steering. Minimizes friction and greatly increases the ease of handling.

FORD V·8 TRUCKS

Regulars—One-Tonners—

¾-Tonners—

Cab-Over-Engine



The New Hy-Rocket Hydraulic Pump Installed Under the Hood of a Truck, and Showing the One-Lever Control in the Cab

Hydraulic Power Pump for Road Equipment

A new fan-belt driven, easily installed, high-pressure hydraulic pump with one-lever cab control for the fast operation of snow-plows, truck maintainers and hydraulic road machinery, has been announced by Monarch Road Machinery Co., 327-329 Front Avenue, N. W., Grand Rapids, Mich. This Hy-Rocket delivers pressures up to 1,000 pounds per square inch and gives quick action because acceleration of the truck engine governs the pump output. The pump unit requires approximately 1/3-hp to operate.

The pump unit is the only working part and is protected under the hood away from the weather. It is self-lubricating, since it runs submerged in oil. The Hy-Rocket operates on both new and old equipment and is compact in size and built so that it is easy to install on any truck. It is a continuous running, fan-belt powered gear pump circulating at zero pressure 98 per cent of the time, with the oil remaining at low temperature as it flows from the reservoir through hose lines to the pump, by-pass valve, and returns to the tank.

Okonite Vice-President Dies

William K. Vanderpoel, Vice-President of The Okonite Co., 501 Fifth Ave., New York, and of the Okonite-Callender Cable Co., died at his home in South Orange, N. J., on October 21, after a short illness. His association with The Okonite Co. began in 1926, when he was elected Vice-President and Executive Engineer. He had been an officer in numerous national engineering organizations and served on many active engineering committees. In addition to his active leadership in technical society work, Mr. Vanderpoel contributed many authoritative papers and reports on power systems to the organizations with which he was affiliated and to engineering publications.

William K. Vanderpoel, Late Vice-President of The Okonite Co.

Snow-Plow Catalog, Parts and Prices

Good Roads Machinery Corporation, Kennett Square, Pa., has made available to municipal officials a complete thumb-indexed snow-plow catalog listing all types of snow-plows, including reversible blade, V-plows, one-way plows with safety blade trip, one-way plows with safety blade release, and all manner of special plows such as tapered blade adjustments, funnel blades, and one-way shovel blades, as well as center plows. The pages are all well-illustrated and contain complete specifications, including the recommended truck size for handling each plow. With this is available a complete price list of Good Roads Champion snow-plows and equipment for ice and sleet control, as well as the complete list of repair parts for all models.

Municipal officials wishing to be prepared for this winter's snow and ice storms should secure this catalog, price list and parts list immediately for reference. They will be sent free on request.

Largest Sewage Plant Uses Ferric Chloride

Municipalities wishing to improve the efficiency of their sewage-treatment operations will be interested in the methods used in Chicago's Southwest sewage-disposal plant. This is the world's largest mechanically equipped sludge plant, and serves a contributing population of 1,250,000 plus an industrial load equivalent to 1,000,000 population.

Since the principal problem of a sewage-disposal plant is the disposal of the sludge, an increasing number of plants are using sludge conditioners. This Chicago plant, according to the Division of Maintenance and Engineering, uses Dow ferric chloride as the chemical conditioning agent before dewatering the sludge on vacuum filters.

The Dow Chemical Co., Midland, Mich., points out that the use of ferric chloride in sewage treatment is of value both in the chemical precipitation of solids in domestic sewage and industrial waste, as well as for the conditioning of various types of sludges before drying. Ferric chloride aids in the reduction of hydrogen sulphite odors and increases the removal of suspended solids, gives a greater reduction in 5-day B.O.D. and a greater flexibility in plant operations to meet peak loads.

Investigators have said that experimental work on all types of sludge has indicated that in order to produce equal rates of filter cake production, 1 part of ferric iron as chloride is equal to 1.15 parts as chlorinated copperas, and to 1.33 parts as sulphate. Every problem in sewage treatment is an individual one, however, and therefore The Dow Chemical Co. advises that individual experiments be conducted in order to evaluate the advantages of various chemical coagulants.

Cresswell Has Joined Clay Sewer Pipe Assn.

The Clay Sewer Pipe Association, 945 Oliver Building, Pittsburgh, Pa., has announced the appointment of Fred S. Cresswell, formerly PWA engineer in Washington, to be Promotion Engineer for the Association. Mr. Cresswell will have offices in the Munsey Building, Washington, D. C., and will direct work for the Association in Virginia, West Virginia, Maryland and Washington, D. C.

You can't get rid of
SLIMY SAM SEWER SLUDGE
with a shovel—

You gotta have an OK Champion Sewer Cleaner to clean out your sewer mains.

The hand models will get him positively, but the power machines will do it faster. You don't want to send men down to spend all day in the sewer when it isn't necessary. You can't endanger the health of your citizens by dirty sewers when the remedy is so easy. Your expensive sewage disposal plant can't do its best work when sewers are dirty and costly damage to the plant happens regularly with dirty sewers.

Many years of rains washing down street dirt, cinders, bricks, etc., eventually fill up any sewer. Finally comes the day of flooded basements, damage suits and hurry-up, unsatisfactory, emergency, temporary cleaning.

New York City, Atlantic City, Flint, Little Rock, Bay City, Duluth, Westfield, Jersey City, Akron, Midland, Gary and hundreds of other cities keep their sewers at full efficiency by routine machine cleaning with OK Champion equipment. The cost is very low.

Why not get your copy of OK Champion literature, now ready for you?

CHAMPION CORPORATION
4716 Sheffield Ave., Hammond, Ind.

LITTLEFORD

BLACK TOP ROAD MAINTENANCE EQUIPMENT — SINCE - 1900

Better ROAD MAINTENANCE EQUIPMENT

Now is the time to make your plans for 1940. Check up your equipment requirements for next year and include Littleford Black Top Road Equipment on your list. This equipment was designed for efficiency and to cut costs. That's why users always specify Littleford when in the market for new Black Top Road Equipment. Let these modern units do your work next year—you'll see the difference. For any detail information write

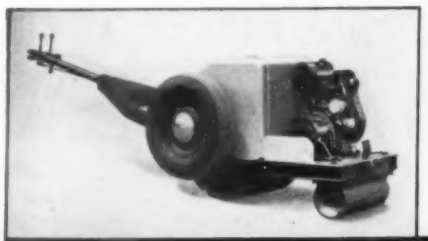
LITTLEFORD BROS.
500 E. Pearl St. Cincinnati, Ohio

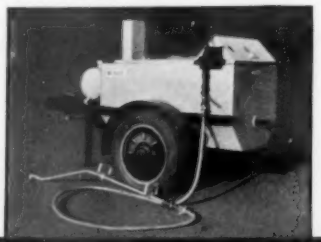
Model "C" Pressure Distributor—the new revolutionary unit for applying tar, asphalt or road oils. Should be first on your list of new equipment.

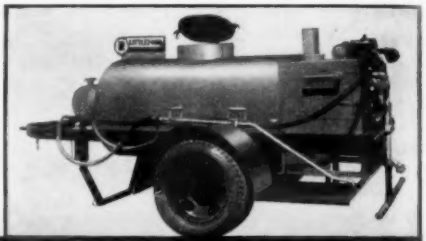
Motorized Wheeled Roller—here's the Roller designed to trail behind a truck—used for rolling patches, service cuts, etc.

No. 84-HD Kettle—this is the famous "double heat circulation" kettle designed to heat faster and spray faster. Made in all sizes.

No. 101 Utility Spray Tank—this unit can give you three units in one, has spray bar, draw-off cock, and hand spray attachment.







MANUFACTURED BY **LITTLEFORD BROS.** CINCINNATI, OHIO

DE LAVAL CLOGLESS PUMPS

for liquids carrying solids

have the following distinctive features:

IMPELLER: Shrouded or enclosed; single suction; wide passages; extra long hub protected by renewable bronze sleeve.

WEARING RINGS: Of bronze, one threaded on impeller and other seated in casing and cover; arranged for clear water sealing.

STUFFING BOX: Located over impeller hub to reduce shaft overhang, clear water sealed; gland horizontally split.

BEARINGS: Spaced well apart to give steady support to shaft; instantly accessible upon lifting bearing cap; large duplex ball thrust bearing; grease lubricated.

CASING: Split horizontally; cover removable without disconnecting piping; pump overhangs bedplate so that piping connections are accessible; hand-hole cover for quick inspection.

● Ask for Catalog B-1

DE LAVAL STEAM TURBINE CO.
TRENTON, NEW JERSEY 3304

CHLOR-O-HEATER

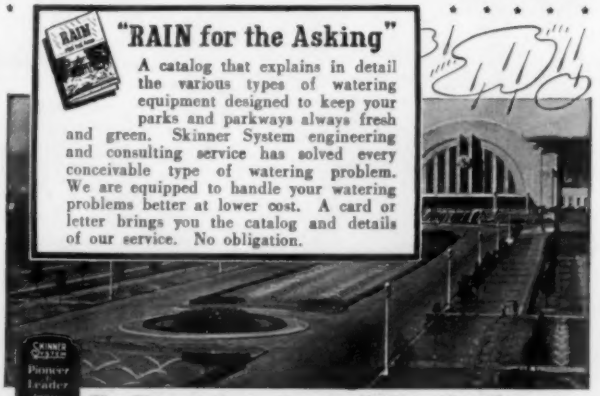
A standardized unit for use in any water works enclosure for apparatus the efficiency of which is impaired by zero weather.

700 - watt size, 110 or 220-volt, only $37.50 f.o.b.

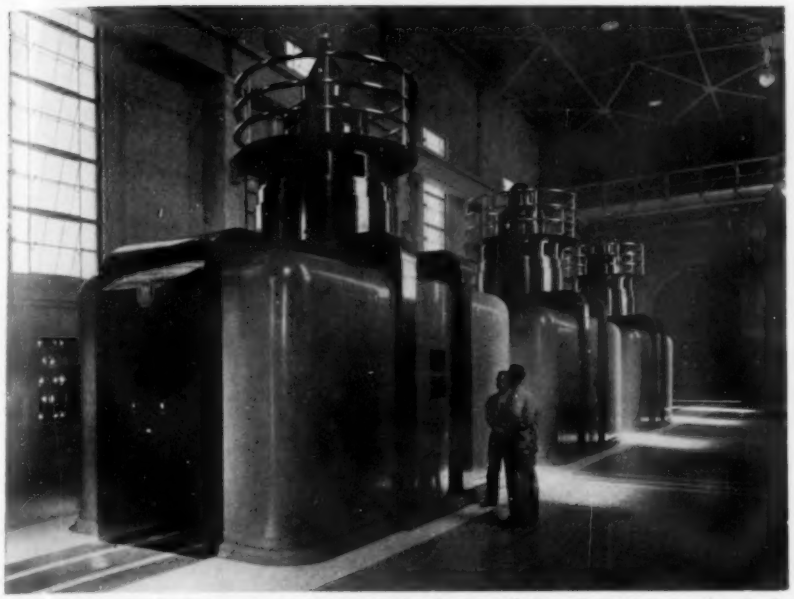
% PROPORTIONEERS % CHEMICAL FEEDER HEADQUARTERS
CODDING ST. PROVIDENCE, R. I.

"RAIN for the Asking"

A catalog that explains in detail the various types of watering equipment designed to keep your parks and parkways always fresh and green. Skinner System engineering and consulting service has solved every conceivable type of watering problem. We are equipped to handle your watering problems better at lower cost. A card or letter brings you the catalog and details of our service. No obligation.



The Skinner Irrigation Co., 447 Canal St. Troy, Ohio



The Three Westinghouse Pump Motors Already Installed and Tested in the Eagle Mountain Station of the Colorado River Aqueduct

Large Pump Motors Ready for Service

Three of the six largest pumping motors in the world have already been installed in the Eagle Mountain station of the Colorado River Aqueduct and recently successfully completed their initial trial runs. These Westinghouse synchronous motors each deliver 12,500 hp at 450 rpm to the vertical pumps which lift the water a total of 438 feet on its way from the Colorado River to Los Angeles and neighboring cities. The capacity of each pump is 200 second-feet, or 130,000,000 gallons of water per day.

Three identical motors, made by Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., are installed in the Hayfield station, where the head is only slightly greater—444 feet. The motors are started directly across the 6,900-volt lines, stepped down from the 230,000-volt line built solely to carry power from Boulder Dam for aqueduct pumping.

Water will be delivered to the coastal cities in 1940 through the diversion of the Colorado River at the Parker dam 150 miles below Boulder Dam. The project also includes a total of five pumping stations with an aggregate lift of 1,634 feet, of which Eagle Mountain and Hayfield have the greatest heads, and 242 miles of aqueduct made up principally of 92 miles of tunnels, 55 miles of cut and cover conduit, 63 miles of open-lined canals, and 29 miles of siphons.

Skinner of Pitometer Retires After 22 Years

A. E. Skinner, District Manager of The Pitometer Co., in Chicago, Ill., has resigned because of ill health after 22 years of service with The Pitometer Co. He plans to live in California.

Cyrus R. Bird, who is now District Manager in Detroit, will take charge of the Chicago office, and the Detroit office will be closed. H. E. Beckwith, District Manager, whose office has been in Harrisburg, will be moved to Pittsburgh, Pa., and he will take over the greater portion of Mr. Bird's present territory as well as his own.

CATHODIC PROTECTION

The only positive method of preventing rusting, pitting and corrosion in steel water containers

THE PATENTED

RUSTA-RESTOR TRADE MARK REGISTERED

Patented and Patents Pending

METHOD

Steel Water Tanks

Filter Beds

For complete details

write

RUSTA RESTOR CORPORATION

1450 W. State St., Fremont, O.

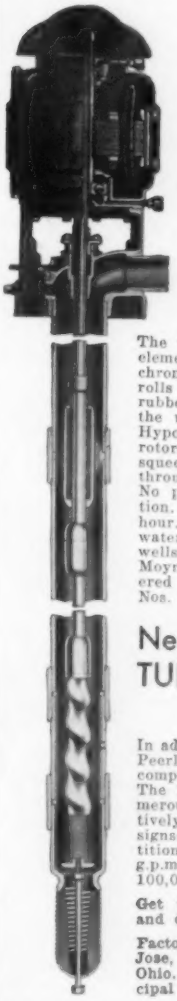
PEERLESS HI-LIFT

—most talked-about pump in America

Introduces a new principle

Reduces cost of pumping

Simplest of all designs



An utterly new principle of lifting water is exclusively embodied in the amazing Peerless Hi-Lift Pump. Nothing like it has ever been offered before.

The water-lifting or pumping element consists of a hard chrome helical rotor which rolls within a cutless resilient rubber stator bearing at half the usual pump shaft speed. Hypocycloidal motion of the rotor with the stator literally squeezes the water spirally through the pumping element. No priming. No pre-lubrication. 300 to 5000 gallons per hour. Shaft bearings are water-lubricated. For deep wells, 4" or larger.
Moyno pumping principle covered by R. Moineau patents Nos. 2028407 and 1892217.

New 1940 Models TURBINE PUMPS also ready

In addition to the new Hi-Lift, Peerless now offers the most complete line of Turbine Pumps. The 1940 models embody numerous improvements. Positively the most advanced designs—years ahead of competition. Capacities up to 10,000 g.p.m. Propeller Pumps, to 100,000 g.p.m.

Get the 1940 Peerless sales and distribution story.

Factories: Los Angeles, San Jose, Fresno, Calif.; Massillon, Ohio. Distributors in all principal cities.

REQUEST FOR FULL PARTICULARS

Peerless Pump Division,
Food Machinery Corporation,
301 W. Ave. 26, Los Angeles, Calif.

Without obligation, mail full particulars regarding all types of Peerless Pumps.

NAME .....

ADDRESS .....

CITY ..... STATE.....

This removable feature makes

Mathews Hydrants Frostproof

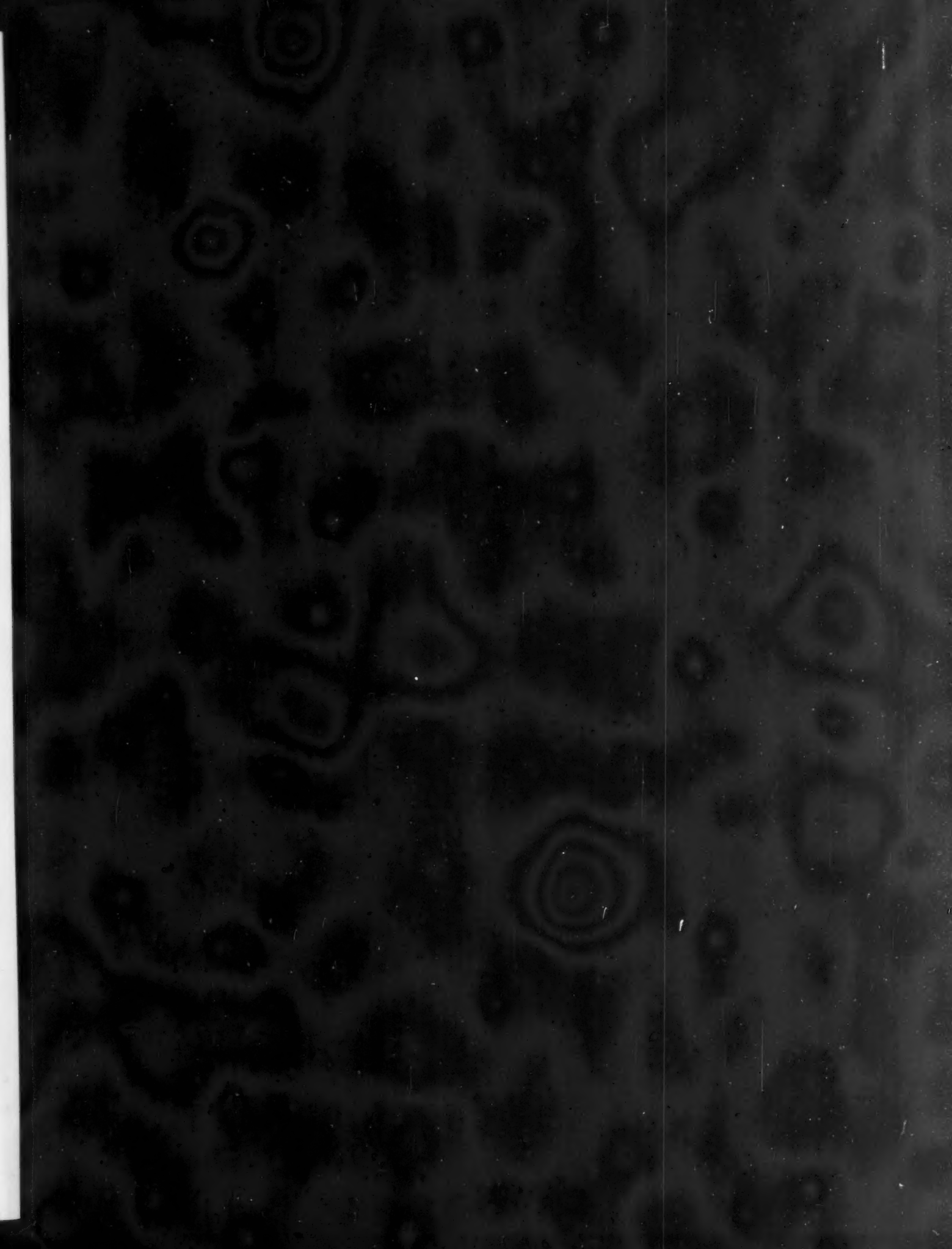
It means much to your city that all operating parts of a Mathews Hydrant are contained in the barrel which slides down through the protection case and screws into the elbow. Not only does it provide a quick-change method which lets you use spare barrels to repair traffic damage or make general overhauls quickly—but in winter it provides active prevention of frost damage. The hydrant barrel, containing all working parts, screws tight into the elbow, but the protection case rests loose, free to rise as ground freezes around it and swells. With no force exerted on water-carrying parts, thrusting frozen ground can not crack castings or loosen joints. Specify Mathews and enjoy this advantage, for winter and frost are the most serious threats to fire protection.

MATHEWS HYDRANTS

***Made by* R. D. WOOD COMPANY**

Manufacturers of Sand Spun Pipe (centrifugally cast in sand molds) and R. D. Wood heavy-duty gate valves for water works

400 CHESTNUT STREET, PHILADELPHIA, PA.



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DECEMBER, 1939

The American City

DEC 18 1939

As Lancaster, Pa., greets its citizens with Christmas decorations at its Water Filtration Plant, THE AMERICAN CITY extends to its readers the season's best wishes and the hope that the New Year for all may be full of personal happiness and civic achievement

See page 56